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ABSTRACT

The Universities of Tennessee and Georgia, as one of four regional data collection teams, cooperated in defining a comprehensive set of behavioral objectives for business and office education, derived from analysis of task performance requirements and of social roles in office occupations. A pilot study developed and tested instrumentation and interview techniques prior to collecting 252 interviews of typical office workers. In a random sample of 305 interviews representing the four regions, 91 items of hardware, divided into 11 categories, were found to be used by beginning office workers. Typewriter keyboard machines, communicating machines, and adding-calculating machines accounted for 60 percent of hardware usage. Of the changing tasks reported, 52 percent were represented by computers and data processing, and 94 percent were found in large metropolitan areas. A national survey of office supervisors, covering both effective and ineffective behaviors of office workers, yielded 829 usable social interaction critical incidents, which usually involved the worker's use of social sensitivity in dealing with customers, peers, and superiors. A classification scheme was developed, based on the worker's perception of social role expectations within the system. (Author/AG)

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DEVELOPMENT OF PERFORMANCE GOALS FOR A NEW OFFICE AND BUSINESS EDUCATION LEARNING SYSTEMS

PART I. Analysis of Hardware Used by Office Workers
PART II. Analysis of Social Interaction Critical Incidents

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College of Education
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January, 1970

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Development of Performance Goals for a New Office and Business Education Learning Systems

Part I. Analysis of Hardware Used by Office Workers
Part II. Analysis of Social Interaction Critical Incidents

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In cooperation with Dr. Frank Lanham, Wayne State University, and the Delta Pi Epsilon Board of Governors for Research and Development in Business Education.

1970

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University of Georgia

Athens, Georgia

Contents

Summary v

Introduction vi

Objectives 1
Assumptions and Limitations 2

Methods 3

Pilot Data Collection 3
Major Data Collection 4
Hardware Usage 5
Social-Interaction Critical Incidents 7

Findings and Analysis 9

Pilot and Major Data Collection 9
Hardware Usage 10
Social-Interaction Critical Incidents 27

Conclusions and Recommendations 39

Hardware Usage 39
Social-Interaction Critical Incidents 40

References 42

Glossary 43

Appendixes 44

A. NOBELS' Interview Forms 44
B. Data Control Forms 58
C. University-Company Communications 66
D. Progress Reports 71

Tables

Table 1 Percentage distribution of cases collected by size, SIC, sex, and SMSA 9

Table 2 Frequency distribution of the classifications of hardware used by beginning office workers. 13

Table 3 Percentage distribution of hardware usage in relation to job title. 14

Table 4 Percentage distribution of hardware usage in relation to area of activity 16

Table 5 Percentage distribution of hardware usage in relation to standard industrial classification 17

Table 6 Percentage distribution of hardware usage in relation to standard metropolitan statistical area 19

Table 7 Percentage distribution of hardware usage in relation to software used on the hardware. 20

Table 8 Percentage distribution of hardware usage in relation to software used with the hardware. 21

Table 9 Summary of 68 changing tasks in a random sampling of 305 NOBELS interviews in the major data collection as reported by supervisors and employees, May-August, 1969. 23

Table 10 Sixty-eight changing tasks grouped according to job title. 24

Table 11 Sixty-eight changing tasks grouped according to standard metropolitan statistical area 25

Table 12 Sixty-eight changing tasks grouped according to standard industrial classification 26

Table 13 Distribution of 829 Usable Social-Interaction Incidents. . . .28

Summary

This study reports the cooperative activities of the Universities of Tennessee and Georgia, as one of four regional data collection teams, involved in defining a comprehensive set of behavioral objectives (performance goals) for business-office education which are derived by analysis of the performance requirements of tasks and of social roles in current and emerging office occupations. Such goals, encompassing technological changes, skill, and role requirements, and advances in learning theory, represent the basis for much-needed curriculum revision in the field.

Studies were conducted at the University of Georgia to analyze (1) current and emerging hardware used by office workers, and (2) effective and ineffective social interaction behaviors of office workers.

Instrumentation and interview techniques were developed and tested in a pilot study preliminary to on-site observations of trained data collectors in the major data collection stage. Two hundred fifty-two interviews, or approximately 27 per cent of the 1252 total, were collected in the major data collection period by the Georgia-Tennessee team. A judgmental sample was drawn so that employees selected were typical of office workers as represented by U. S. Census data.

In a random sample of 305 NOBELS interviews representing the four regions, 91 items of hardware were found to be used by beginning office workers. These 91 items were divided into eleven hardware categories. Sixty percent of hardware usage was accounted for by typewriter keyboard machines, communicating machines, and adding-calculating machines. Typewriter keyboard machines and mailing equipment were the only types of hardware used by workers of all job titles. Typewriter keyboard machines were the only hardware classification that occurred in all ten activity areas. Fifty-two percent of the changing tasks reported was represented by computers and data processing. Ninety-four percent of changing tasks reported were found in metropolitan areas of over 100,000 population.

Eight hundred twenty-nine usable social interaction critical incidents were collected nationwide from office supervisors covering both effective and ineffective behaviors of office workers. A classification scheme, based on the worker's perception of social role expectations within the formal or informal company system, was developed. A majority of social interaction incidents reported in offices surveyed in the study involved the worker's use of social sensitivity in dealing with customers, peers, and superiors. Incidence of ineffective behaviors reported in situations involving reaction to stress and judgment-decision making was almost twice as high as affective behaviors reported in the same situations.

Introduction

The data in this report, as part of Phase II of a larger study, ('Development of Performance Goals for a New Office and Business Education Learning System'[1]) grew out of a planning study to determine the feasibility of developing a new business and office education curriculum.[2] The overall design of the New Office and Business Education Learnings System (NOBELS) employs an analog system model as a developmental framework. A major outcome of the total project is the development of a comprehensive set of educational performance goals representing business and office education--goals developed from the hardware, software, and interaction involved in emerging office occupations and from empiric data collected from offices throughout the nation. Such goals encompassing technological change, skill and role requirements, and advances in learning theory represent the basis for much-needed curriculum revision in the field.

Phase II of the study involved the cooperative efforts of four regional data collection teams under the general direction of Dr. Frank M. Lanham of Wayne State University as principal investigator:

(1) University of California at Los Angeles
Lawrence Erickson, Director
(2) University of Georgia at Athens
Calfrey C. Calhoun, Director
(3) State University of New York at Albany
Herbert A. Tonne, Director
(4) University of Minnesota at Minneapolis
Ray G. Price, Director

The project encompassed profession-wide leadership support represented through its sponsorship by the Board of Governors for Research and Development in Business Education.

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[1]Frank Lanham, et. al., Development of Performance Goals for a New Office and Business Education Learnings System, USOE Project 8-0414, Final Report in Process.

Frank Lanham, et. al., A Planning Study to Determine the Feasibility of Developing a New Business and Office Education Curriculum, (Phase 1), USOE Project No. 7-1223, June, 1968.

Objectives

The major purpose of this study was the collection and analysis of data prerequisite to the development of performance goals.

Project personnel were involved in

a. determining a framework for analyzing current and emerging office tasks

b. isolating trends and concepts from emerging office occupations and practices and converting these to performance goals

c. developing a sampling design for collecting data from office work stations

d. developing a procedure and a training program for data collection

e. converting field data to performance goals

f. analyzing statistically the data collected

prerequisite to reporting a master list of performance goals.

In order to achieve this objective, several specific objectives were identified:

1. To identify, select and train data collectors for pilot and major data collection.

2. To identify specific locations from which data would be collected in both pilot and major study.

3. To identify specific business firms to be surveyed in data collection in pilot and major study.

4. To determine the basic tasks and social role requirements of office workers.

5. To analyze current and emerging hardware used by beginning office workers.[1]

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[1]The types of machines used in business are constantly changing. It is necessary to recognize that modern engineering has caused replacement of certain types of business machines on which instruction has been given in the past and that other changes will occur affecting the curricula. It is important for curriculum planners in business education to know what machines are used by office workers, the degree of training demanded, and whether the demand will continue. As ar input to curriculum planning, business teachers must know about the equipment used in business and industry today and be prepared to teach accordingly. So that business teachers may be properly prepared to teach, a determination of what machines are used now and will be used in the future is necessary.

a. to identify hardware used in offices today.

b. to determine the relationship between hardware used and job titles, areas of activity, Standard Industrial Classification, Standard Metropolitan Statistical Area, and software used on the machine and with the machine.

c. to determine the areas where changing tasks were observed in relation to hardware.

6. To analyze both effective and ineffective interaction behavior of office workers based on actual observations by their job supervisors[1]

a. to develop a classification scheme for the social interaction incidents collected by interviewers during the major data.

b. to formulate sample performance statements for successful social interaction of beginning office workers.

Assumptions and Limitations

Hardware Usage. The following assumptions and limitations were made with relation to the Hardware Usage Study:

1. The data are reported correctly by office workers and their supervisors and recorded accurately by the NOBELS interviewers.

2. Any of the NOBELS interviewers would have obtained essentially the same information from a particular interviewee.

3. The sampling (1,008 interviews in the major data collection) could be generalized to the total population.

4. Reliability of the findings are limited to the reliability of the instrument used in the study.

5. Generalizations from the study are limited to the beginning office worker as defined above.

6. The sample for the study included 305 randomly selected NOBELS interview forms from the 1,008 interviews collected in the total NOBELS study.

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[1] Previous research studies have revealed that business needs specific desirable traits and characteristics in beginning office workers. How to develop such characteristics, attitudes, and attributes as educational goals has been a problem to curriculum developers. It is necessary to recognize that the social context in which these traits occur is an important consideration in developing goals for social interaction. Valid criteria for social interaction requirements of office workers must be established that are based on empirical observations of actual happenings in the office today. To accomplish this, critical incidents were collected from office supervisors covering both effective and ineffective behaviors of office workers holding entry-level jobs.

Social-Interaction Incidents

The following limitations may be ascribed to the social interaction incidents study:

1. The analysis reported in the study was limited to a total of 829 usable incidents falling within the "social interaction" category as opposed to incidents related to task performance.

2. While the social interaction incidents analyzed were systematically categorized as "internal" or "external" to the company with respect to the occurrence of behavior, the type of behavior in each incident was generally limited to a single descriptor (attribute or characteristic) although many incidents may have involved a number of descriptors.

METHODS

Pilot Data Collection

The University of Georgia and UCLA were selected as pilot data collection centers in preparation for the major data collection which involved four (regions) Universities throughout the country.

In December, 1968, specific plans and delineation of pilot data collection procedures were formulated.

Pilot data collection personnel were recruited from departmental staff and doctoral students at the University of Georgia and the University of Tennessee. The following persons were active in the pilot project:

Dr. C. C. Calhoun, Project Director	University of Georgia
Dr. Alton Finch, Assistant Project Director	University of Georgia
Dr. Bobbye Jo Wilson, Data Collector	University of Georgia
Mr. John Sheppard, Data Collector	University of Georgia
Mrs. Margrett Adams, Data Collector	University of Georgia
Mrs. Norma Reames, Graduate Assistant	University of Georgia
Miss Betty Brown, Data Collector	University of Tennessee

(Under supervision of Prof. George Wagoner, University of Tennessee)

Pre-planning and training sessions for data collectors were held in January and February, 1969. Team members were familiarized with details of the project including (1) Mager's Preparing Instructional Objectives; (2) Huffman, et. al., Taxonomy of Office Activities; and the (3) Revised copy of the NOBELS proposal.

The pilot data collection team joined project personnel from Wayne State University, University of California at Los Angeles, University of Minnesota, and State University of New York at Albany for the NOBELS Training Session February 14-17 in Detroit where operational details of data collection were explained. Interviews with supervisors and employees were rehearsed as a basis for the preparation of generalized performance statements.

Eighty-six interviews of beginning office workers and their supervisors were conducted during the pilot study in the Atlanta, Macon, Athens, and Knoxville metropolitan areas.

These data were used as a basis for refining the data collection instruments and techniques.

In March the project director met with the principal investigator and other area project directors to review the progress and problems of the two pilot centers (UGA and UCLA) and to consider the statement of work and schedule for the major data collection.

Major Data Collection

Major data collection personnel were recruited from the departmental staff and graduate students of the University of Georgia and the University of Tennessee. The following persons were involved in this phase of the project:

Dr. C. C. Calhoun, Project Director	University of Georgia
Dr. Alton V. Finch, Assistant Project Director	University of Georgia
Dr. Bobbye Jo Wilson, Report Reader	University of Georgia
Mrs. Norma Reames, Graduate Assistant	University of Georgia
Mrs. Janet Farnsworth, Clerk-Typist	University of Georgia
Mrs. Lynda Wilms, Data Collector	University of Georgia
Miss Edna Cole, Data Collector	University of Georgia
Miss Betty Brown, Data Collector	University of Tennessee
Miss Pat Campbell, Data Collector	University of Tennessee
Miss Helen Petree, Data Collector	University of Tennessee
Mr. George Wagoner, U.T. Coordinator	University of Tennessee

A training session for major data collectors was held May 12-13 at the University of Georgia at which time revised interview forms (Appendix A) and interview techniques were discussed and practiced.

Data Control forms (lists of responsibilities, itinerary, progress report forms and interview quotes) for project personnel were prepared and distributed. (Appendix B)

Sample letters to be used in contacting companies were distributed. (Appendix C)

The proposal for Phase II called for a minimum of 1,000 interviews to be collected through the four regions, making each region responsible for at least 250 interviews.

To approximate the U. S. Census data concerning the employment of office workers, the sample from each of the area centers was based on the following factors:

a. Standard Metropolitan Statistical Area - seven-ninths of all office workers are employed in metropolitan areas of 100,000 or more.

b. Size of Company - approximately four-fifths of all office workers are employed in companies of 100 or more employees.

c. Standard Industrial Classification - approximately 80% of all office workers are employed in service; public administration; finance, insurance, and real estate; and manufacturing.

d. Sex - a ratio of one male to two females.*

Since the overall concern of NOBELS is with preparation for entry level employment, or beginning office workers, the following criteria was identified in Phase II proposal for selection of interviewees:

a. Workers must be between 16 - 24 years of age.

b. Workers must not be college graduates, although they might have attended college.

c. Workers must have been on the job long enough to be knowledgeable about the basic tasks.

Based on criteria identified above, specific companies to be contacted were identified in Athens, Atlanta, Augusta, Columbus, Knoxville, Macon and Savannah. Names, addresses and standard industrial classification of firms in Georgia and Tennessee (primarily in the Knoxville metropolitan area) were obtained from The Million Dollar Directory by Dun & Bradstreet, 1968 and The Middle Market Directory by Dun & Bradstreet, 1968.

Initial contact with top level company management was made through the use of a letter from the project director which explained the project and requested company participation. A postal card was enclosed for company use in identifying the supervisor who would serve as contact person with the project. (See Appendix C)

The supervisor specified was contacted by telephone and the interview was arranged. A letter of confirmation was sent to the supervisor verifying the number of workers to be interviewed, criteria for worker selection, and the date and time of interview. (Appendix C)

After the interview, a letter was sent to the company supervisor thanking him for their participation. (Appendix C)

Data was collected by interviewers from June 2 - August 29, 1969. All interview forms were mailed to the principal investigator at Wayne State University.

Hardware Usage

The following procedures were employed in the analysis of hardware used by beginning office workers:

* This was subsequently changed to 1:4.

1. A preliminary study of 75 interviews collected in Georgia and Tennessee (Southeast regional data) was conducted by tabulating data in relation to the objectives identified.

2. A frequency listing was made and a tentative code was devised for the 73 machines which occurred in the preliminary study.

3. Each page 6 of the NOBELS interview form (Task Data for Performance Goal Preparation) in the major data collection was secured on microfiche from the Principal Investigator.

4. In order to compile a representative report, a random sample of 305 interview forms was used. This number (N=305) represented 30.2 percent of the major data sample (N=1,008). Every third interview was pulled until the sample number was reached. Regional areas were represented in proportion to the data collected in each of the areas participating in the study.

5. Interview numbers were matched from the random sample with interview numbers on the microfiche. The data from each of the page 6's were tabulated and then grouped according to code classifications received from the principal investigator of NOBELS.

6. The interview number, job title, standard metropolitan statistical area, standard industrial classification, area of activity, and changing tasks (grouped according to code classifications of the principal investigator) were secured from pages 1, 2, 4, and 5 of the random sample. (Page 3 (critical incidents) was not used in this study.)

7. After referring to several studies dealing with hardware used in offices today, including one done by the Connecticut State Department of Education[1] and one by Cook and Maliche,[2] a classification scheme was devised by combining the preliminary coding and information secured from the studies. After the classification scheme was devised, the writer examined the miscellaneous class closely because of the large number of hardware falling into this category. Two additional categories were subsequently added, banking and stamping machines. A division of duplicating machines into copying machines (those machines using non-liquid reproduction) and miscellaneous duplicating machines (those machines using liquid reproduction) completed the final revision of the classification scheme.

8. The data were tabulated and grouped into tables according to the classification scheme for hardware as prepared by the NOBELS research staff.

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[1]Connecticut State Department of Education, Division of Vocational Education, Hartford, Connecticut, "Business Education Curriculum Implications of the Effects of Technology on the Types of Office Machines Used by Selected Connecticut Businesses," University Microfiche, ED 012 788, April, 1967.

[2]Fred S. Cook and Eleanor Maliche, "Office Machines Used in Business," The Delta Pi Epsilon Journal, VIII (May, 1966), pp. 1-15.

Social Interaction Critical Incidents

A structured interview schedule (Appendix A) was used to record information collected during personal interviews with the supervisor of the office worker. The following questions were asked to obtain effective and ineffective social interaction critical incidents:

> "Since assuming this job, there must have been times when this employee did an outstanding job of working with someone else or in handling a situation with a customer or client either face to face or on the telephone. Would you cite an example and tell me in what way this employee handled the situation effectively?"
>
> "Now would you give me an incident when this employee was a bit less than 100 percent effective in his contact with other business people - either in the office or with you business contacts?"

Each critical incident obtained was placed on a 5 x 8 card and the interview code number was affixed for identification purposes. A classification scheme was developed in order to group the incidents into related categories; critical behaviors were extracted from the incidents; and samples of performance statements were formulated.

Formulating the Classification Scheme. Each incident was examined to determine its usableness and to separate examples of behaviors involving task performance from those involving social interaction. Criteria of usability required that a given incident must report both an observed behavior of the office worker and the results of the worker's behavior. Incidents that did not meet these criteria were excluded from the social interaction categorization scheme.

A total of 1,160 incidents were related to social interaction. Of the total, 331 or 29 percent were rejected because they did not meet the requirements for usability. Of the rejections, 104 were incidents that identified desirable or undesirable personal characteristics of the office worker that could influence effective or ineffective social interaction but were not, of themselves, specific examples of behavior. Thirty-one of the total number of incidents were examples of a lack of social interaction, i.e., social interaction did not occur when the situation demanded that it should occur. These two categories were not applicable for the purposes of this study.

A total of 829 usable incidents were incorporated into the classification scheme.

The general frame of reference for the social interaction classification scheme was developed by a committee of NOBELS research staff. It concerned the worker's perception of his role expectations within the formal system of his company and his perception of relationships apart from role expectations. Incidents were classified according to the occurrence of the behavior among persons within the company (the internal system) or with persons from outside the company (the external system).

This scheme was studied and tested, and subsequent revisions were made. The following classification scheme was then adopted.

Social Interaction Classification Scheme

I. Worker's Perception of His Role Expectation Within the Formal System

A. The Internal (Closed) System

1. Relation to Superiors
2. Relation to Peers
3. Relation to Subordinates

B. The External (Open) System

4. Relation to Customers or Clients
5. Relation to Sales or Service Personnel
6. Relation to Others (Visitors, Applicants, Donors)

II. Worker's Perception of Relationships Apart from Role Expectations

A. The Internal (Closed) System

7. Relation to Superiors
8. Relation to Peers
9. Relation to Subordinates

B. The External (Open) System

10. Relation to Customers or Clients
11. Relation to Sales or Service Personnel
12. Relation to Others (Visitors, Applicants, Donors)

In addition, six descriptors were derived to describe the type of behavior exemplified by each incident. These descriptors are as follows:

A. Telephone Communication (Did the incident occur on the telephone?)

B. Information (Was information concerning job content or company policies necessary for successful interaction?)

C. Reaction to Stress (Was the worker able to control self and handle unusual or difficult situations?)

D. Judgment/Decision-Making (Did the worker have to make a decision or use judgment for successful interaction?)

E. Initiative/Creativity (Did the worker use these attributes in interacting?)

F. Social Sensitivity (Did the worker exhibit willingness to help, tact, courtesy, or social graces in dealing with others?)

Coding the Data. Each usable incident was carefully read and the critical behavior was underlined on the card. The incident was then classified into one of twelve categories of the classification scheme regardless of whether the incident was an example of an effective or ineffective behavior. In order to identify the category, each incident was assigned to a category number (1-12) written at the botton of the card. The incident was further coded by writing on the card one or more letters (A,B,C,D, or F) to denote the descriptors which were applicable to the incident.

FINDINGS AND ANALYSIS

Pilot and Major Data Collection

Questionnaire results from eighty-six pilot interviews conducted in the Atlanta, Macon, Athens, and Knoxville metropolitan areas were furnished to project headquarters in Detroit. These data were used as a basis for revision of instrumentation and interview techniques.

Two hundred fifty-two usable interviews were collected in the major data collection phases of the study.

The following table shows the percentage of cases collected according to the four factors used in selection of interview cases.

TABLE 1. Percentage Distribution of Cases Collected by Size, SIC, Sex, and SMSA

		UGA (156 cases)	UTenn. (96 cases)	Total (252 cases)
Size	Under 100 employees	17%	8%	14%
	Over 100 employees	83%	92%	86%
SIC	1-4[1]	69%	68%	68%
	5-13[2]	31%	32%	32%
Sex	Male	20%	14%	18%
	Female	80%	86%	82%
SMSA[3]	Over 100,000	80%	88%	83%
	Under 100,000	20%	12%	17%

[1]Includes following Standard Industrial Classifications: (1) Finance, Insurance, Real Estate; (2) Manufacturing; (3) Service; (4) Agriculture, Mining, Construction.

[2]Includes following classifications: (5) Transportation; (6) Communication and Utilities; (7) Wholesale-Rental Trade; (8) Federal Education; (9) Federal, Noneducation; (10) State, Education; (11) State, Noneducation; (12) Local, Education; (13) Local, Noneducation.

[3]Standard Metropolitan Statistical Area.

The data on the preceding page constitutes approximately 27 percent of the total 1,252 pilot and major data collection cases.

Total data from all regions are in process of analyzation at Wayne State University according to office job classification, departments in which performed, sex, age, size of company and population area. The data also forms the basis for determining generalized statements of tasks and steps in their performance. Educational performance goals and educational implications of NOBELS task information are treated in the overall final report by the principal investigator, Dr. Frank Lanham at Wayne State University. Results of analyses of hardware usage among entry level office workers as well as performance statements and educational implications of social-interaction incidents are treated in the following sections.

Hardware Usage

A total of 91 items of hardware used by beginning office workers was found in the random sample of 305 NOBELS interview forms. These items divided into eleven types of hardware as listed below.

Accounting/Bookkeeping Machines

- Bookkeeping machine
- Tabulating machine
- Posting machine

Adding/Calculating Machines

- Full-key adding machine
- Full-key proof machine
- Printing calculator
- Rotary calculator
- Ten-key adding machine
- Comptometer
- Cash register
- Calculator
- Full-key calculator
- Adding machine

Communicating Machines

- Intercom system
- Switchboard
- Telephone
- Auto-caller
- Tape recorder
- WATS

Duplicating Machines

A. Copying
   - Xerox
   - Photocopying machine
   - Microfilm machine (makes microfilm)
   - Blueprint machine
   - Automatic printing machine

Miscellaneous
Mimeograph
Offset press
Spirit duplicating machine
Graphotype machine
Hectograph

Dictating/Transcribing Machines

Dictating/Transcribing machine

Banking Machines

Checkwriter
Electric coin counter
Hand check stamp
Signature stamp machine
Teller machine (date, amount, account number)
Endorsing machine
Currency sorting machine
Check copier

Electronic Data Processing Machines

Key punch
Mohawk
Sorting machine
Verifier
Computer
Check sorting machine
Reproducing punch
Collator
Accounting machine
Interpreter
Computer card reader
Computer operated typewriter (console)
Mid-punch machine
NCR analysis machine

Mailing Equipment

Hand date stamp
Letter opener
Mail weighing machine
Postage Stamp machine
Postal scales
Machine date stamp

Stamping Equipment

Addressograph
Hand miscellaneous items stamp
Plate stamping machine
Time stamp machine
Imprinter machine (credit cards)

Typewriter Keyboard Machines

Composer
Telegram machine
Teletype machine
Typewriter (manual and electric)
Typewriter for metal plates
Magnetic tube typewriter
MTST
Varityper

Miscellaneous Machines

Conveyer belt
Hand hole punch
Micro-film reading machine
Perforating machine
Pneumatic tube
Scissors
Stapler
Stopwatch
Uncoder machine
Forms bursting and decoilating machine
Polaroid camera
Laminating machine
Automobile
Cutting machine
Folding machine
Inserter machine
Electric bundling machine
Microfiche viewer
Jogging machine
Binding machine

Table 2 shows the frequency distribution of the occurrence of the eleven categories of hardware as used by beginning office workers. Hardware falling into the Typewriter Keyboard Machines classification occurred more frequently (31 percent) than any other type of hardware. Communicating Machines ranked second (18 percent) in occurrence and Adding/Calculating Machines ranked third (15 percent). Electronic Data Processing Machines ranked fourth, accounting for 8 percent of the occurrences. Dictating/Transcribing, Accounting/Bookkeeping, Duplicating Machines/Miscellaneous, and Banking Machines occurred less frequently than other types of hardware, each accounting for 2 percent of the occurrences.

TABLE 2 Frequency distribution of the classifications of hardware used by beginning office workers

Hardware Classifications	Occurrences %
Typewriter Keyboard Machines	31
Communicating Machines	18
Adding/Calculating Machines	13
Electronic Data Processing Machines	8
Mailing Equipment	7
Miscellaneous Machines	6
Duplicating Machines/Copying	6
Stamping Equipment	5
Dictating/Transcribing Machines	2
Accounting/Bookkeeping Machines	2
Duplicating Machines/Miscellaneous	2
Banking Machines	2
	102*

* Rounding error.

In the following sections, analyses are made between hardware classifications and job titles of office workers, area of activity, standard industrial classification, standard metropolitan statistical area, and software. The final section analyzes changing tasks occurring in the random sample.

Job Title Job title classifications used in this study, defined by the MOBELS research staff, are: Mail Clerk/Messenger, File Clerk, General Clerk, Public Contacts Operator, Typist/Clerk, Office Machine Operator, Data Processing/Equipment Operator, Accounting Clerk, Telephone Switchboard Operator/Receptionist, Stenographer/Secretary, and Materials Support Operators/Transportation/Storing/Recording. Table 3, showing relationships between job titles of office workers and the frequency with which they use office machines, indicates that Typewriter Keyboard Machines and Mailing Equipment are the only types of hardware used by workers of all job titles.

As expected, Typist/Clerks and Stenographers/Secretaries used the Typewriter keyboard Machines more frequently than other office workers, accounting for 48 percent and 45 percent respectively of the occurrences of hardware usage by workers in these two classifications. Telephone Switchboard Operators/Receptionists and Public Contacts Operators used Communicating Machines more frequently than other office workers, each accounting for 43 and 40 percent respectively of hardware usage by these workers. Accounting Clerks used Adding/Calculating Machines more frequently than other office workers, accounting for 36 percent of hardware usage by these workers.

Although other hardware accounted for only small percentages of the total occurrences, it is important to note that 47 percent of hardware usage by Mail Clerks/Messengers occurred on Mailing Equipment and that 64

TABLE 3.--Percentage distribution of hardware usage in relation to job title

Hardware	Mail Clerk Mess.	File Clerk	Gen. Clerk	Public Contacts Operator	Typist Clerk	Office Machine Operator	Data Processing Equipment Operator	Acct. Clerk	Telephone Switchboard Operator Recpt.	Steno. Sec.	MSO**	TOTAL
Accounting/Book-keeping Machines	-	-	1	2	-	-	5	5	-	1	-	2
Adding/Calculating Machines	-	-	8	5	11	11	9	36	-	6	25	13
Communicating Machines	-	31	23	40	16	8	9	11	43	20	-	18
Duplicating Machines Copying	7	15	4	5	5	11	-	5	5	7	12	6
Duplicating Machines Misc.	7	-	3	-	4	3	-	-	-	2	12	2
Dictating/Transcribing Machines	-	-	1	-	3	6	1	-	-	5	-	2
Banking Machines	-	-	-	-	1	3	-	5	-	1	-	2
Electronic Data Processing Mach.	-	-	2	7	1	22	64	3	3	-	-	8
Mailing Equipment	47	15	10	2	2	6	4	5	18	6	12	7
Stamping Equipment	-	-	7	12	6	6	1	7	5	2	25	5
Typewriter Keyboard Machines	13	31	28	19	48	22	4	18	28	45	12	31
Misc. Machines	27	8	12	9	4	3	3	6	-	4	-	6
TOTAL	101*	100	99*	101*	101*	101*	100	101*	102*	99*	98*	102*

*Rounding error

percent of hardware usage by Data Processing/Equipment Operators occurred on Electronic Data Processing Machines.

Area of Activity. The activity areas (functions) used for this analysis, as shown in Table 4, are: Accounting, Electronic Data Processing, Personnel, Medical, Purchasing, Receiving/Shipping, Sales/Marketing/Advertising, Services, General Office, and Production.

Typewriter Keyboard Machines accounted for the greatest frequency of hardware usage in five activity areas: Personnel (53 percent), Medical (60 percent), Receiving/Shipping (50 percent), Sales/Marketing/Advertising (29 percent), and Services (47 percent). Typewriter Keyboard Machines were also the only hardware classification that occurred in all activity areas. Adding/Calculating Machines accounted for the greatest frequency of hardware usage by Accounting workers (40 percent).

The greatest degree of concentration in any area of activity occurred in Data Processing; these workers accounted for 82 percent of their hardware usage with Electronic Data Processing Machines. Machines in this category were used almost exclusively by Data Processing workers. Communicating Machines usage was indicated by all areas except Production, and the workers in Purchasing indicated their hardware usage primarily on Communicating Machines (50 percent of the occurrences).

The hardware used most frequently by General Office workers was Mailing Equipment (31 percent) and by Production workers was Duplicating Machines/Copying (40 percent). Duplication Machines/Miscellaneous were used almost exclusively by General Office workers, and Dictating/Transcribing Machines were used almost exclusively by office workers in the Services classification.

Standard Industrial Classification. Hardware usage in relation to Standard Industrial Classification is shown in Table 5. The major classifications used for the analyses are: Agriculture/Forestry/Fisheries; Mining; Contract Construction; Manufacturing; Transportation/Communication/Electric/Gas/Sanitary Services; Wholesale/Retail Trade; Finance/Insurance/Real Estate; Services; Government; and Non-classifiable Establishments. As there were no occurrences of hardware usage in Agriculture/Forestry/Fisheries and only one occurrence in the Non-classifiable Establishments category in the 305 interview forms analyzed, they were not included in Table 5.

There appears to be no major concentration of hardware usage in any Standard Industrial Classification category. The one category where concentration seems to be greater than in the other categories is in Mining, with 53 percent of hardware usage occurring on Typewriter Keyboard Machines and 26 percent on Communicating Machines. All other occurrences of hardware usage in Mining are on Adding/Calculating Machines, Electronic Data Processing Machines, and Mailing Equipment.

In the Contract Construction classification, Adding/Calculating Machines and Typewriter Keyboard Machines occur with equal frequency, 28 percent of the occurrences. Banking Machines were found to be used only in Manufacturing; Finance/Insurance/Real Estate; and Government. With some minor exceptions, hardware usage in other Standard Industrial Classifications seems to approximate the total percentage distribution of hardware, as shown in Table 2.

TABLE 4.--Percentage distribution of hardware usage in relation to area of activity

Hardware	Accounting	Data Proces.	Person-nel	Medical	Purchas-ing	R/S**	Sales**	Ser-vices	General Office	Product-ion	Total
Accounting/Book-keeping Machines	6	3	-	5	-	-	3	-	-	-	2
Adding Calculating Machines	40	4	9	15	-	17	19	2	-	20	13
Communicating Ma-chines	5	3	15	10	50	8	25	36	2	-	18
Duplicating Ma-chines Misc.	3	-	9	-	10	-	3	-	26	40	6
Dictation/Trans-cribing Machines	-	-	2	-	-	-	-	1	10	-	2
Banking Machines	4	-	-	5	-	-	1	-	1	-	2
Electronic Data Processing Ma-chines	1	82	2	-	-	-	1	-	2	-	8
Mailing Equipment	5	3	-	-	-	8	7	1	31	-	7
Stamping Equipment	9	-	2	5	-	-	7	3	7	20	5
Typewriter Keyboard Machines	22	1	53	60	30	50	29	47	12	20	31
Misscellaneous Machines	7	4	9	-	10	17	6	5	10	-	6
TOTAL	102*	101*	101*	100	100	100	101*	100	101*	100	102*

*Rounding Error.
**Data Proces.--Electronic Data Processing. R/S--Receiving/Shipping. Sales--Sales/Marketing/Advertising.

TABLE 5.--Percentage distribution of hardware usage in relation to standard industrial classification

Hardware	Contract Construction	Manufacturing	Wholesale Retail	Fin./Ins. Real Estate	Services	Government	Mining	Transportation Utilities**	Total
Accounting/Bookkeeping Machines	-	2	6	1	4	3	-	-	2
Adding Calculating Machines	28	14	12	15	11	9	5	7	13
Communicating Machines	16	16	18	18	22	21	26	10	18
Duplicating Machines Copying	4	6	3	7	6	6	-	2	6
Duplicating Machines Miscellaneous	4	2	-	-	4	3	-	3	2
Dictating/Transcribing Machines	8	2	1	3	3	3	-	2	2
Banking Machines	-	1	-	3	-	3	-	-	2
Electronic Data Processing Machines	-	8	10	10	4	2	5	23	8
Mailing Equipment	-	5	6	10	3	9	11	8	7
Stamping Equipment	12	4	13	5	2	6	-	5	5
Typewriter Keyboard Machines	28	31	28	25	36	32	53	30	31
Miscellaneous Machines	-	9	1	4	7	3	-	10	6
Total	100	100	98*	101*	102*	100	100	100	102*

*Rounding error.

**Transportation/Utilities--Transportation/Communication/Electric/Gas/Sanitary Services. Agriculture/Forestry/Fisheries category is omitted from table as no hardware usage was found in this category in the sample. Non-classifiable category is omitted as only one occurrence was found.

Standard Metropolitan Statistical Area. Table 6 shows the frequency distribution of hardware usage in relation to the Standard Metropolitan Statistical Area (SMSA). The NOBELS research staff divided the SMSA into two categories: population areas above 100,000 and population areas below 100,000. In Table 6, Typewriter Keyboard Machines appear to be the type of hardware occurring most frequently in both population classifications, accounting for 37 percent and 30 percent respectively of the occurrences. In the -100,000 SMSA category, the second most frequently used hardware are Adding/Calculating Machines, accounting for 21 percent of the occurrences; whereas, in the +100,000 SMSA, these machines account for only 12 percent of the occurrences. In the +100,000 category, the second most frequently used machines are the Communicating Machines, accounting for 19 percent of the occurrences; whereas, in the -100,000 SMSA, these machines account for only 9 percent of the occurrences. Yet, Electronic Data Processing Machines appear to be occurring with equal frequency in both SMSA's, accounting for 8 percent of the occurrences in each area.

Software. To analyze the use of hardware by office workers in relation to the use of software, the software was divided into two categories: (1) the software required on a machine when the worker uses the machine and (2) the software used by the worker with the machine but not on it. Table 7 shows the relationship between hardware used by office workers and software used simultaneously on the hardware. Table 8 shows the relationship between hardware used by office workers and software used simultaneously with the hardware. The software classifications formulated by the NOBELS research staff were used to make the analyses. The classification are: Source Documents; Negotiable Instruments/Investments; Correspondence/Mail; Electronic Data Processing; Files; Reports/Tabulations/Charts; Inventory; and People/Ideas. The total percentage columns in the two tables will not agree with each other nor with the total percentage columns in other tables as some machines required more than one type of software on it and/or with it for a task; some machines required the use of no software.

Software Used ON the Machine. Table 7 shows that software used on the machine occurs most frequently on hardware in the Typewriter Keyboard Machines category, accounting for 45 percent of the occurrences. Adding/Calculating Machines account for the next most frequent use of software on the machines, with 12 percent of the occurrences. Electronic Data Processing Machines and Mailing Equipment account for 9 percent and 7 percent respectively of software usage on the machines; Duplicating Machines/Copying and Mailing Equipment, 5 percent each; Dictating/Transcribing Machines, 3 percent; and Accounting/Bookkeeping Machines, Duplicating Machines/Miscellaneous, and Banking Machines, 2 percent each. The Communicating Machines category accounted for less than .5 percent of software usage and does not appear in the total column in Table 6.

Typewriter Keyboard Machines accounted for the most frequent occurrences of software in the following categories; Correspondence and Mail (69 percent); Reports/Tabulations/Charts (67 percent); Filing (51 percent); and Source Documents (40 percent). As expected, the machine category occurring most frequently in Electronic Data Processing were Electronic Data Processing Machines (84 percent of the occurrences). The machines requiring the most frequent use of Inventory software were Adding/Calculating Machines, accounting for 68 percent. The machines requiring the use of Negotiable Instruments/Investments software were Banking Machines, accounting for 26 percent of the

TABLE 6.--Percentage distribution of hardware usage in relation to standard metropolitan statistical areas**

Hardware	-100,000	+100,000	Total
Accounting/Bookkeeping Machines	1	2	2
Adding/Calculating Machines	21	12	13
Communicating Machines	9	19	18
Duplicating Machines Copying	4	6	6
Duplicating Machines Miscellaneous	-	2	2
Dictating/Transcribing Machines	2	2	2
Banking Machines	4	1	2
Electronic Data Processing Machines	8	8	8
Mailing Equipment	9	6	7
Stamping Equipment	1	5	5
Typewriter Keyboard Machines	37	30	31
Miscellaneous Machines	5	6	6
Total	101*	99*	102*

*Rounding error.

**Standard Metropolitan Statistical Area (SMSA) was divided into two categories: metropolitan areas above 100,000 in population and below 100,000 in population.

TABLE 7.--Percentage distribution of hardware usage in relation to software used on the hardware

Hardware	Source Documents	Negotiable Instruments Investments	Correspondence Mail	Electronic Data Processing	Reports Tabulations Charts	Inventory	Files	Total
Accounting/Bookkeeping Machines	4	2	-	3	3	1	13	2
Adding/Calculating Machines	4	12	2	-	7	68	5	12
Communicating Machines	-	-	-	-	-	1	-	-
Duplicating Machines Copying	11	12	3	-	7	1	5	5
Duplicating Machines Miscellaneous	2	-	1	-	2	8	-	2
Dictating/Transcribing Machines	6	-	3	-	-	3	-	3
Banking Machines	-	26	-	-	1	-	-	2
Electronic Data Processing Machines	-	7	-	84	1	4	-	3
Mailing Equipment	7	2	19	1	2	-	5	7
Stamping Equipment	12	16	4	-	3	-	8	5
Typewriter Keyboard Machines	40	19	59	5	57	10	51	45
Miscellaneous Machines	14	5	1	7	8	3	13	6
Total	100	101*	99*	100	101*	101*	100	99*

*Rounding error.

**People and Ideas category is omitted from table as no on hardware usage was found in this category in the survey.

Table 8.--Percentage distribution of hardware usage in relation to software used with the hardware

Hardware	Stores Control	Negotiable Instruments Investments	Correspondence Mail	Electronic Data Processing	Files	Reports Tabulations Charts	Inventory	Payable Items	Total
Accounting Bookkeeping Machines	3	7	-	5	9	2	-	-	2
Adding/Calculating Machines	38	33	-	60	28	59	50	-	33
Communicating Machines	6	-	7	-	2	-	-	93	42
Duplicating Machines Copying	1	-	-	-	-	-	-	-	-
Duplicating Machines Miscellaneous	-	-	-	-	2	2	-	-	1
Dictating/Transcribing Machines	-	-	36	-	4	-	-	-	11
Punching Machines	1	3	-	-	-	2	-	-	1
Verifying Machines									
Processing Machines	21	16	-	20	-	7	25	-	3
Mailing Equipment	-	-	-	5	4	2	-	-	1
Stamping Equipment	3	-	7	-	-	-	-	-	1
Typewriter Keyboard Machines	30	21	43	-	51	26	25	3	15
Miscellaneous Machines	-	3	7	10	2	-	-	1	1
Total	101*	99*	100	100	102*	100	100	99*	101*

*Rounding error.

occurrences in this category. This is the only instance where Banking Machines appears to have any important relationship.

Software Used WITH the Hardware. Table 8 shows that software used with the machine occurs most frequently when the machine is used to communicate ideas with people. Of the total occurrences of software usage, three types of hardware used most frequently with the software are: Communicating Machines, accounting for 42 percent (93 percent of the People/Ideas software category); Adding/Calculating Machines, accounting for 23 percent (60 percent, 59 percent, 55 percent, and 50 percent respectively of the Electronic Data Processing software; Reports/Tabulations/Charts software; Negotiable Instruments software; and Inventory software); and Typewriter Keyboard Machines, accounting for 20 percent (51 percent and 43 percent respectively of the Files and Correspondence and Mail software categories). Thus, 85 percent of the software used with the hardware is used with machines in these three categories. There appears to be only minor occurrences of software usage with hardware in other categories and in many, no occurrences.

Changing Tasks. Changing tasks were recorded on pages 2 and 5 of the NOBELS interview forms. In the random sample of 305 interview forms studied, 63 interviews included tasks that were changing. A total of 68 individual tasks were indicated as changing. There seems to be some discrepancy as to who knows what tasks are being changed. As shown in Table 9, supervisors indicated they knew of 51 of the 68 tasks changing as compared with 41 changing tasks indicated by the employees. On only 28 of the 68 changing tasks (41 percent) did both the employee and supervisor know the change was to be effected.

Thirty-five, 52 percent, of the 68 changing tasks were in the area of Computers and Data Processing. Reorganization of People or Departments and Increase in Volume or Responsibility each accounted for 9 (13 percent). The telephone was indicated as an area of change in 5 tasks (7 percent). There appears to be no other important changing tasks in relation to hardware in the sample.

As shown in Table 10, the greatest number of changing tasks, when grouped according to job titles, were found in the jobs held by persons classified as Accounting Clerks (22 percent), Data Processing and Equipment Operator (19 percent), General Clerk (16 percent), and Stenographer/Secretary (14 percent). These four categories accounted for 71 percent of the jobs indicated as changing.

When the 63 interviews were grouped according to Standard Metropolitan Statistical Areas, as shown in Table 11, 59 (94 percent) were found in population areas of over 100,000.

When the 63 interviews containing changing tasks were grouped according to Standard Industrial Classification, as shown in Table 12, 16 (25 percent) were found in the Government category. Both the Manufacturing and the Finance/Insurance/Real Estate categories had 14 (22 percent). The Service category was fourth in order of frequency with 7 (11 percent). The four categories of Government, Manufacturing, Finance/Insurance/Real Estate, and Services accounted for 81 percent of the changing tasks.

TABLE 9.--Summary of 68 changing tasks in a random sampling of 305 NOBELS interviews in the major data collection as reported by supervisors and employees, May-August, 1969

Region	No. Indicated			Area of Changing Tasks					
	Supervisor	Employee	Both	Computers D. P.	Telephone	Reorganization of People or Depts.	Increase in Vol. or Responsibility	Misc.	Total
West	19	13	11	11	2	4	2	7[a]	26
South	10	3	4	6	1	2	2	1[b]	12
North Central	8	3	4	8	1	1	2	1[c]	13
Northeast	14	11	9	10	1	2	3	1[d]	17
Total	51	41	28	35	5	9	9	10	68

[a]The seven miscellaneous tasks were: Filing--Centralized,
Post Office and mailing schedules,
Typing contracts,
Burroughs Posting Machine,
Collating automatically,
Printing peripheral device to send to companies, and
Deletion of job.

[b]Georgia law will outlaw non-par banks.

[c]Centralized cash.

[d]Filing--Departmentalized.

TABLE 10--Sixty-eight changing tasks grouped according to job titles

Job Titles	Total		Region			
	No	%	West	South	North Central	Northeast
Mail Clerk/Messenger	1	2	1	-	-	-
File Clerk	2	3	1	-	1	-
General Clerk	10	16	4	1	2	3
Public Contacts Operator	3	5	2	1	-	-
Typist/Clerk	7	11	1	-	2	4
Office Machine Operator	1	2	-	1	-	-
Data Processing and Equipment Operator	12	19	7	2	3	-
Accounting Clerk	14	22	6	3	2	3
Telephone Switchboard Operator/ Receptionist	4	6	2	-	-	2
Stenographer/Secretary	9	14	1	3	2	3
Materials Support Operator	-	-	-	-	-	-
Total	63	100	25	11	17	10

TABLE 11.--Sixty-eight changing tasks grouped according to standard metropolitan statistical area

SMSA	Total		Region			
	No	%	West	South	North Central	Northeast
Over 100,000 population	59	94	25	9	11	14
Under 100,000 population	4	6	-	2	1	1
Total	63	100	25	11	12	15

TABLE 12.--Sixty-eight changing tasks grouped according to standard industrial classification

SIC	Total		Region			
	No	%	West	South	North Central	Northeast
Mining	1	2	-	1	-	
Contract Construction	1	2	-	-	-	1
Manufacturing	14	22	5	4	1	4
Transportation/Communication Electric/Gas/Sanitary Service	4	6	1	-	2	1
Wholesale/Retail Trade	4	6	1	2	1	1
Finance/Insurance/Real Estate	14	22	4	2	4	4
Services	7	11	2	2	1	2
Government	16	25	11	-	2	3
Non-Classifiable Establishments	1	2	1	-	-	-
Total	63	98*	25	11	12	15

*Rounding error.

Social Interaction Critical Incidents

Table 13 presents the distribution of total incidents, both effective (+) and ineffective (-) within categories for the major areas of the classification and including the descriptors of the incidents.

In analyzing the distribution of incidents, the greatest concentration was found to cover the worker's perception of role expectations within the formal company system as related to Category 4 (Relations to Customers or Clients). This category contained 224 incidents or 27 percent of the total usable incidents. The second greatest concentration of total incidents was found to cover the worker's perception of relationships apart from role expectations as related to Category 8 (Relations to Peers). This category contained 173 or 21 percent of the incidents. Category 1 (Relations to Superiors) ranked third in total number of incidents with 152 or 18 percent of the total number. Within the formal system, most of the social interaction incidents occurred with customers and superiors; within the informal system, most of the incidents occurred with peers.

In analyzing the distribution of the incidents among the descriptors, Category A (Telephone Communications) contained 69 examples of effective incidents and 28 examples of ineffective incidents. A total of 97 incidents or 12 percent of the total incidents involved a reported behavior that had occurred over the telephone.

Distribution of incidents in Categories B (Information), C (Reaction to Stress), D (Judgment/Decision-Making), E (Initiative/Creativity), and F (Social Sensitivity) are presented in Table 13 on the following page. The greatest number of effective incidents were concentrated in Category F (Social Sensitivity). One hundred ninety-five or 24 percent of the total incidents were found in this category. The largest number of ineffective incidents were also in this category with 139 incidents or 17 percent of the total number of incidents. Forty-one percent of the total number of incidents involved social sensitivity. Category B (Information) contained 154 incidents or 18 percent of the total; Category C (Reaction to Stress) contained 106 incidents or 13 percent of the total; Category D (Judgment/Decision-Making) contained 145 incidents or 17 percent of the total; and Category E (Initiative/Creativity) contained 90 or 11 percent of the incidents.

It can be concluded that a majority of office social interaction incidents reported in this study involves a worker's use of social sensitivity in dealing with situations involving customers or clients, their superiors, and their peers.

Formulating the Social Interaction Task Performance Goals

A performance goal, written in Magerian terms, could be developed for each specific incident or for groups of incidents containing similar behaviors. It is beyond the scope of this study to write goals for all the incidents. Rather, examples of the types of performance goals are presented for categories within the classification scheme.

TABLE 13

DISTRIBUTION OF 829 USABLE SOCIAL INTERACTION INCIDENTS

	B[1]		C		D		E		F		Total	%
	+[2]	-	+	-	+	-	+	-	+	-		
I. Formal System												
A. Internal												
1. Superiors	19	6	4	21	11	24	13	4	26	24	152	18
2. Peers	30	5	1	6	4	5	6	2	10	20	89	11
3. Subordinates	8	1	0	4	0	3	1	2	4	5	28	3
B. External												
4. Customers	51	12	9	21	22	14	24	3	42	26	224	27
5. Salesmen	5	0	1	0	0	0	2	2	6	3	19	2
6. Others	6	4	4	3	7	4	8	1	15	3	55	7
II. Informal System												
A. Internal												
7. Superiors	1	1	4	3	1	11	7	1	8	8	45	5
8. Peers	4	0	4	13	7	22	9	0	69	45	173	21
9. Subordinates	1	0	1	0	0	0	1	0	1	3	7	1
B. External												
10. Customers	0	0	2	2	2	0	1	0	7	0	14	2
11. Salesmen	0	0	0	0	0	1	0	0	0	1	2	1
12. Others	0	0	3	0	0	7	3	0	7	1	21	2
Total	125	29	33	73	54	91	75	15	195	139	829	
Percent	15	3	4	9	6	11	9	2	24	17		100%

[1] Descriptors: B (Information)
C (Reaction to Stress)
D (Judgment/Decision-Making)
E (Initiative/Creativity)
F (Social Sensitivity)

[2] + designates effective behaviors; - designates ineffective behaviors.

[3] Incidents in category A (telephone communication) are included in totals of categories B-F and are not presented separately.

In formulating these performance goals, the conditions of the situation, the desired behavior of the worker, and the methods of achieving this behavior were considered. These goals are stated in positive terms.

The following are examples of performance goals for social interaction situations that can be developed from the 829 incidents in this study.

Category 1--Relation to Superiors

B. Information (1024)[1]

Given a telephone call from a top management official to a supervisor who does not wish to be disturbed, the employee exhibits good judgment by

(1) recognizing the name of the official and

(2) transferring the call immediately to the supervisor.

C. Reaction to Stress (3136, 3154, 1271, 1175, 2062, 8001, 1243, 1274, 1207, 2139, 9002)

Given criticism concerning the performance of his work, the employee remains calm and controls emotions by

(1) discussing the problem with the supervisor

(2) listening carefully and patiently to comments of supervisor

(3) refraining from taking out his anger on other employees

(4) correcting any errors that have been made.

D. Judgment/Decision Making (1135, 1154, 2108, 3223, 4237, 8003)

Given a problem he cannot handle, employee uses good judgment by

(1) determining the most qualified person to ask for help, and

(2) obtaining help from another source either on telephone or in person.

Category 2--Relation with Peers

A. Telephone Communication

Given a situation involving work with her peers in person or over the telephone, the worker exhibits patience, understanding and tact by

(1) using a pleasant voice

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[1]Number in parenthesis denotes coded interview number of critical incident or incidents contributing to the performance statement.

(2) explaining step-by-step procedures

(3) working through a few problem-type situations

(4) correcting errors by further explanation or handling the job herself.

B. Information

Given a request for information over the telephone, the worker uses a warm, pleasant tone, and

(1) decides the nature of the information needed

(2) decides the information is within the scope of her job

(3) demonstrates initiative and knowledge of her job and its applications by locating and giving the needed information in a minimum amount of time, or

(4) explains what action she will take in getting the needed information to the person requesting it.

C. Reaction to Stress

Given an employee with whom it is difficult to interact, the worker achieves success in getting desired information by

(1) understanding that the employee may be having a rough day, and not letting it unnerve her

(2) sending for or referring to proper supervisor if she cannot get the desired information

(3) Refraining from insulting remarks.

D. Judgment/Decision-Making

Given the responsibility for training another employee, the worker demonstrates her ability and willingness to train the worker by

(1) communicating her knowledge and understanding of the job

(2) exhibiting a positive and enthusiastic attitude

(3) maintaining her own workload while training the worker

(4) not imposing her own standards of performance on other worker

(5) being patient with and interested in other people.

E. Initiative/Creativity

Given an assignment involving a special project with another worker, employee demonstrates her initiative and desire to work with others by

(1) following up on instructions and making sure all materials are ready when needed

(2) listening carefully and accepting instructions from others

(3) voluntarily helping other workers when she is caught up

(4) using warm voice in making requests of others.

Category 3--Relations with Subordinates

B. Information (1176, 3087, 3089, 3182, 4194-6)

Given the responsilbility of instructing others to handle projects, the worker successfully communicates with subordinates by

(1 explaining all details clearly

(2) patiently demonstrating correct method of performance

(3) tactfully repeating instructions when necessary

(4) assisting subordinates when necessary

C. Reaction to Stress (1278, 2029)

Given an employee under pressure to get his work out, he keeps office operating smoothly by

(1) refraining from giving orders without stating reasons for them

(2) tactfully helping others who are having difficulty.

D. Judgment/Decision Making (1078)

When personal friends break company rules concerning time allocated for breaks and lunch, worker exercises good judgment by

(1) disciplining them as he would any other worker, and

(2) not showing favoritism.

Category 4--Relation to Customer or Clients

B. Information (4073)

Given a client seeking specific information which the worker is not able to deliver immediately, the worker makes a decision based on her knowledge of the job and on the client's particular situation.

(1) If the worker needs the information immediately, the worker must give him what he thinks his supervisor would approve and accepts the responsibility as well as the possibility for having made the wrong decision.

(2) If the worker does not require the information immediately, the worker tells him when he can have the information for him.

B. Information (1051)

Given a customer who expresses discontent with the company's statement of her account which indicates to her that the company has an incorrect balance, the worker patiently, courteously, and tactfully

(1) determines that the customer does not understand the company's procedure in processing statements and

(2) explains the procedure in such a way that the customer understands and accepts it.

E. Initiative/Creativity (3228)

Given a client who is delinquent in payments on his account, the worker tactfully uses creativity and knowledge to show the client how he can make partial payment on the account until it is paid off. He must do the following:

(1) persuade the client that he is interested in the client's welfare

(2) determine the client's financial situation

(3) advise the client, when necessary, of better money-management practices, and

(4) advise the client, when appropriate, of a way he can make his payments.

F. Social Sensitivity (4160)

Given an over-the-counter customer, the worker establishes and maintains rapport by

(1) cheerfully greeting him with a "Good Morning" or "Good Afternoon"

(2) responding with a "Thank You" or "You're Welcome" as appropriate upon completing the transaction.

F. Social Sensitivity (1282)

Given a client (taxpayer) requiring information not instantly available, the worker courteously

(1) decides on the location of the information

(2) informs client before leaving him that it is necessary for her to go to another place to obtain the information so that the client does not feel he is being ignored

(3) returns with the information and gives it to the client, or

(4) refers him to an alternate source if she cannot locate the information.

F. Social Sensitivity (1229)

Given a customer who disagrees with the company's policy, the worker tactfully and patiently

(1) gives the customer a reason(s) for the policy

(2) convinces the customer that the policy ultimately protects or benefits the customer as well as the company.

F. Social Sensitivity (4073)

Given a client who needs information and/or assistance in completing printed forms, the worker

(1) determines the extent to which help is needed

(2) exhibits (through mannerisms, facial expression and speech) a desire to help the client; and

(3) patiently assists him by

(a) giving him the needed information; and/or
(b) assisting him in completing the printed forms, either telling him what is required on the form as the customer completes it or by completing the form for the customer as they discuss it; and,
(c) if necessary for the particular customer, forwarding the forms to the proper person(s).

F. Social Sensitivity (1063)

Given a customer (patient) who comes in without an appointment, crying and hysterical, demanding to see a particular official (doctor) who is unavailable, the worker patiently, sympathetically, and calmly talks with the customer

(1) assuring the customer that she will receive the attention she needs and calming her emotional outbursts

(2) convincing the customer that the official (doctor) she wants to see is not available and suggesting that she see someone else who might help her or that she see the person she wants to see now at a later time.

Category 5--Relation to Sales or Service Personnel

B. Information (1271, 4087, 4231, 4236)

Given a visitor (sales representative) who drops by to talk with the supervisor, the worker takes charge of handling the caller by

(1) explaining the circumstances of supervisor's absence

(2) carrying out the instructions covering such situations given to him previously by the supervisor.

E. Initiative/Creativity (2198, 4114)

Given a request to telephone suppliers to order supplies for the company, the worker demonstrates initiative by

(1) obtaining firm delivery date from the supplier

(2) securing all vital information concerning discounts and quantity purchases that will allow the company to save money.

F. Social Sensitivity (2153, 4177)

Given a telephone inquiry from a vendor who has not received payments from the company (because of a backlog of work), the worker pacifies the vendor by

(1) finding the cause of the late payment

(2) offering a truthful explanation to the vendor

(3) assuring vendor that payment will be made immediately.

Category 6--Relation to Others

B. Information (1117, 1131, 1244, 3068, 4184)

Given a call requesting confidential information on company employees, the worker resists pressure from the caller by following company policy in divulging information.

C. Reaction to Stress (1121, 3191)

Given an irate applicant who insults and accuses the worker of being prejudiced against him, the worker controls the situation by assuring him that he is being treated fairly.

D. Judgment/Decision Making (3258)

Given an applicant who is suspected of being dishonest about his age in completing an application form, the worker uses initiative to ascertain the correct information by checking applicant's credentials (driver's license).

E. Initiative/Creativity (1238, 2097)

Given an inquiry from a caller that the worker cannot answer because of lack of time, she demonstrates good judgment by referring caller to another person who can help him and by taking time to consult necessary sources to obtain information.

F. Social Sensitivity (2002, 3074, 3091, 3098, 4227, 4247)

Given job applicants who are nervous about being processed and tested, the worker puts them at ease by

(1) giving them helpful instructions about completing the forms

(2) pointing out problem areas on application blanks or test forms

(3) exhibiting a friendly and personal interest in each applicant.

Category 7--Relation to Superiors

C. Reaction to Stress (3045, 4038, 4157, 4159)

Given a superior who loses his composure in reprimanding or demanding work from the employee, the employee remains calm by

(1) displaying no visible reaction to rudeness

(2) listening patiently to what is being said, thereby pacifying the superior.

D. Judgment/Decision-Making (1264, 3100)

Given a supervisor who returns to the office after an absence, the worker uses good judgment by refraining from gossiping to him about the performance of other workers while he was away.

D. Judgment/Decision-Making (1080, 2115, 3086, 4153)

Given a worker who has questions to ask or information to give to his superior, he exercises good judgment by choosing the proper time to interrupt him with the question or information.

E. Initiative/Creativity (2197)

Given procedures for obtaining information to be given to a superior (which procedures do not work smoothly), the employee is creative by suggesting new methods that may be tried to obtain the information.

F. Social Sensitivity (2124, 3209)

Given a supervisor who needs the worker to perform extra duties not a part of her regular job, the worker exhibits cooperation by offering his services to the supervisor.

Category 8--Relation to Peers

B. Information (3010, 3158, 4176)

Given a worker confronted with a job task which she does not understand how to perform (such as preparing payroll, handling special accounts); or

(1) A. explaining the procedures involved in completing the task
B. assisting the performance of the task, if necessary

(2) acquainting the new employee with job responsibilities through

A. demonstrating tasks related to the job
B. showing location of supplies, equipment, etc., related to job
C. preparing notebook or handbook containing information about job, samples of forms, reports, etc.

C. Reaction to Stress (2098)

Given a senior worker who is short tempered or impatient in explaining job responsibilities, the new employee demonstrates self-control by

(1) remaining pleasant and friendly to older worker (harmony, cooperativeness)

(2) remaining silent when other employees complain about older worker (diplomacy, tact)

C. Reaction to Stress (2160)

Given an irate worker who is angry about payroll check deductions, the employee demonstrates self-control and composure by

(1) listening politely while worker complains

(2) tactfully or calmly making necessary explanations about the check and the worker's complaint.

F. Social Sensitivity (1151) and C. Reaction to Stress (1151)

Given a typed report returned to the typist by reviewer who had proofed it, indicating errors to be corrected, the typist demonstrates the ability to accept constructive criticism by

(1) recognizing and accepting fact that the reviewer is responsible for the report, including its accuracy

(2) listening attentively to explanation of errors by reviewer, without making excuses for errors

(3) making necessary corrections on the report.

D. Judgment/Decision-Making (1030, 1141, 1173, 3184)

Given job tasks involving the handling of confidential information regarding employees and company business, the employee exhibits dependability by

(1) tactfully refusing to discuss confidential information, both at work and off the job

(2) keeping confidential materials filed in the proper place

(3) discussing confidential information only with persons authorized by the supervisor.

E. Initiative/Creativity (2150)

Given a task to be completed by the department periodically although not the specific responsibility of any one employee, and confusion on part of employees as to who will perform the task, the employee demonstrates initiative by voluntarily

(1) recognizing a need for organizing staff to handle task

(2) devising a rotation schedule for task completion that distributes the work evenly and systematically among the employees

(3) tactfully explaining the plan and gaining cooperation of co-workers in carrying out the plan for handling the task.

F. Social Sensitivity (3)

Given a working situation involving Cuban refugees as well as white employees and in which Cuban employees speak very little English and are experiencing difficulty in gaining friendship of co-workers, the employee demonstrates ability to establish rapport with minority group by

(1) showing a desire to help by assisting Spanish-speaking employees with English language

(2) inviting minority group employees to join her at coffee break

(3) having lunch with minority-group employees.

Category 9--Relation to Subordinates

B. Information (1199, 1210)

Given a new employee who needs additional instruction and demonstration, the worker uses his knowledge by

(1) explaining content of the job to the new worker, and

(2) describing the relationship of the employee's job to other jobs in the department.

F. Social Sensitivity (2061)

Given a new employee, the worker demonstrates courtesy by introducing her to her co-workers and by inviting new worker to join her for coffee.

Category 10--Relation to Customers or Clients

C. Reaction to Stress (4119)

Given an emergency call, during supervisor's absence, requiring immediate action, the worker remains calm and obtains all necessary information to give to the caller by consulting the sources available.

D. Judgment/Decision-Making (1123, 4139)

Given an irate customer, the worker uses judgment by listening courteously to his complaints and diplomatically referring him to the proper person.

F. Social Sensitivity (3146)

Given a customer who becomes upset and loses control of his emotions, the worker calms the customer by talking quietly with her and offering to help her find a solution to the problem.

Category 11--Relation to Sales or Service Personnel

C. Reaction to Stress

Given a misunderstanding which occurs during communication with repairmen or salesmen, the worker controls the situation by refraining from showing any irritation or by resorting to name-calling.

Category 12--Relation to Others

C. Reaction to Stress (1265, 3176, 4123)

Given an outsider who creates a disturbance on company premises, the worker handles the situation by calling the necessary personnel to handle the incident.

D. Judgment/Decision-Making (2102)

Given a personal telephone call, the worker uses judgment by limiting the duration of the call and by asking the caller to refrain from calling him at work except during emergencies.

E. Initiative/Creativity (4161)

Given an emergency telephone call for an employee of the company, the worker demonstrates initiative by obtaining all pertinent information from the caller and locating the employee as quickly as possible.

F. Social Sensitivity (3033)

Given visitors who are touring the company, the worker builds a good image for the firm by courteously answering their questions and offering to help them in any way she can.

CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations of this report are limited to the analyses of hardware use and of social interaction incidents, studies which were completed at the University of Georgia.

Hardware Usage

As the secondary school office education curriculum must be developed at the local level to fit the supply and demand for beginning office workers so that most graduates of the curriculum might readily find work where they might use their skills, it is difficult to draw conclusions that might be universally applied. However, the findings of this study tend to support some generally accepted ideas as to what should be taught and tends not to support some ideas as to what should be taught.

The data support the generally accepted idea that Typewriter Keyboard Machines are universally used by beginning office workers. Other types of machines that appear to be used extensively by these workers are Communicating Machines and Adding/Calculating Machines. It might be concluded that the secondary office education curriculum should generally emphasize learning activities to teach potential office workers Typewriting Keyboard Machines, Communicating Machines, and Adding/Calculating Machines. Office skills needed in the use of these machines should be studied to see what skills might be profitably learned at the secondary level by potential office workers.

Machines that appear to be used less frequently by beginning office workers are Dictating/Transcribing Machines, Accounting/Bookkeeping Machines, Duplicating Machines/Miscellaneous, and Banking Machines. It might be concluded that secondary office education curriculum should generally not emphasize learning activities to teach potential office workers such machines.

Even though Mailing Equipment accounted for only 7 percent of the hardware usage by beginning office workers is essentially the same for both metropolitan groups studied (SMSA below 100,000 and above 100,000). With the frequency of usage of Adding/Calculating Machines greater in the SMSA below 100,000, one might conclude that the trend in the SMSA above 100,000 is for office workers to use these machines less as more and more work is done by computers. However, data also show that the frequency of usage of Electronic Data Processing Machines is the same for workers in both SMSA.

Where there is a local situation with a high demand for a particular skill in hardware usage, the findings support the conclusion that such skills might be a part of the office education curriculum at the secondary level. For example, as office workers in data processing primarily use this equipment, a local secondary school system should study its office education curriculum to see if such skills might profitably be taught, if there is enough demand for such workers.

It appears, from the findings of this study, that "changing tasks" as such should not readily affect the high school office education curriculum. The hardware skills that generally need to be learned would generally be the same regardless of the tasks that change, unless a local situation, as described in the preceding paragraph, would indicate differently.

Social Interaction Critical Incidents

The following conclusions are based upon an analysis of social interaction incidents reported in the study.

1. Data collected covering social interactions were adequate to the formulation of a social-interaction classification scheme.

2. A majority of social-interaction incidents reported in offices surveyed in the study involve the worker's use of social sensitivity in dealing with situations involving customers, the worker's superiors, and his peers.

3. The incidence of ineffective behaviors reported in situations involving reaction to stress and judgment-decision making were almost twice as high as effective behaviors reported in the same situations.

4. Approximately two-thirds of the total incidents reported involved the worker's perception of his role expectations within the formal system.

5. It was possible to develop from the data collected in the study positively-oriented sample performance goals consistent with the social interaction classification scheme adopted.

Recommendations

The following recommendations grow out of the findings and conclusions of this study:

1. Critical incidents containing examples of lack of social interaction were excluded from this analysis; these should be analyzed separately.

2. Those incidents not meeting the requirements for a specific critical incident but containing examples of desirable or undesirable personal characteristics should be studied separately.

3. Other critical incidents should be collected and incorporated into this classification scheme to provide more data for the development of more detailed performance statements.

4. Studies should be conducted in which only those inter-action incidents which fit into a pre-determined classification scheme are collected.

5. In-depth studies should be conducted covering individual categories of effective or ineffective behaviors identified in this study.

6. Further testing and validation should be carried out using the classification scheme used in this study.

7. Further study and analysis of the criteria for success and nonsuccess in interaction situations should be made with particular reference to establishing why people are effective or ineffective in selected critical incident situations.

8. Case studies and other learning materials based on the critical incidents collected in NOBELS should be developed.

9. Detailed analyses of selected samples of the total social interaction incidents, using other bases for classification, should be conducted as a basis for revision of business-office education curricular objectives within the affective domain.

10. Additional studies should be made to determine the most effective instrumentation for capturing critical interaction incidents and for converting these into educational objectives.

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Glossary

1. Beginning office worker: an office worker between 16 and 24 years of age with less than a baccalaureate, who does not supervise other workers more than 50 percent of his time. A person holding an entry-level job in a business office for not more than six years.

2. Critical incident. The description of a specific happening involving an effective or ineffective outcome by an action of an office worker.

3. Critical incident technique. A set of procedures for collecting direct observation of human behavior in such a way as to facilitate the the potential usefulness of these behaviors in solving practical problems and developing broad psychological principles.

4. Data: the raw materials of the office used in the production of information.

5. Entry-level job. A job that could be held by a beginning office worker as a first job.

6. Hardware: a device that does work and converts materials into products or services.

7. Observers. Office supervisors who supply data in the form of critical incidents.

8. Performance statement. A statement expressed in terms of specific behavior, social role behaviors, and social norms that are amenable to measurement or assessment.

9. Role. Expectations about behaviors of persons occupying specific positions in the office.

10. Software used on the machine: Materials, programs, documents, and forms attached to the machine when it is being used. For example, adding machine tape on an adding machine would be software used on the machine.

11. Software used with the machine: materials, programs, documents, and forms that give input into the use of the machine or receive input from the machine. For example, a ledger into which information obtained through the use of a machine is recorded by hand.

Appendix A

NOBELS'

Interview Forms

_____ Interviewer

NOBELS' INTERVIEW FORM

A. INFORMATION ABOUT COMPANY

1. COMPANY CONTACT PERSON/TITLE _____

Department _____ _____ Telephone No. _____ Ext. _____

Address _____
(Number) (Street)

_____
(City) (County) (State) (Zip)

Wants summary of study? Yes _____ No _____

2. COMPANY _____

Employing Unit - that is, the name of unit at this geographical site where this interview is held (e.g., name of plant or division) _____

3. SIZE - Check total number of all employees in above unit at this site: +100 _____ -100 _____

4. STANDARD METROPOLITAN STATISTICAL AREA _____

5. STANDARD INDUSTRIAL CLASSIFICATION OF COMPANY AT THIS GEOGRAPHICAL SITE (Check one)

(1) ____ Finance, Insurance, Real Estate
(2) ____ Manufacturing
(3) ____ Service
(4) ____ Other-Agriculture/ Mining/Construction
(5) ____ Transportation
(6) ____ Communication and Utilities
(7) ____ Wholesale/Retail Trade
(8) ____ Federal, Education
(9) ____ Federal, Noneducation
(10) ____ State, Education
(11) ____ State, Noneducation
(12) ____ Local, Education
(13) ____ Local, Noneducation

INTERVIEWER: YOU MAY WANT TO DESCRIBE NOBELS IN WORDS SIMILAR TO THE FOLLOWING TO THE COMPANY CONTACT AND/OR THE SUPERVISOR YOU INTERVIEW:

"IN NOBELS, NEW OFFICE AND BUSINESS EDUCATION LEARNINGS SYSTEM, WE ARE STUDYING THE TASKS THAT OFFICE WORKERS PERFORM IN THEIR JOBS. IN ORDER TO REVISE SCHOOL CURRICULUMS, WE NEED TO KNOW WHAT OFFICE WORKERS ACTUALLY DO AND WHAT MAKES THEM EFFECTIVE OR INEFFECTIVE."

"THESE FORMS ARE BEING CODED IN SUCH A WAY THAT THE INFORMATION YOU GIVE US CANNOT BE IDENTIFIED BY OTHERS IN YOUR COMPANY AND LATER CANNOT BE IDENTIFIED BY SPECIFIC COMPANY OR WORKERS."

Interviewer

B. INFORMATION FROM SUPERVISOR

6. SUPERVISOR NAME/TITLE_____

Department_____ Telephone No._____ Ext._____

Address (if different from above_____

"SINCE YOU ARE THE SUPERVISOR OF A (JOB TITLE OF EMPLOYEE) WE FEEL YOU ARE ESPECIALLY WELL QUALIFIED TO TELL US ABOUT THE BASIC TASKS OF THE (JOB TITLE OF EMPLOYEE). DO YOU HAVE A WRITTEN JOB DESCRIPTION OF (EMPLOYEE'S) JOB?" IF YES, "MAY I HAVE A COPY?"

7. "BASIC TASKS CONSTITUTE THE CENTRAL PURPOSE OF THE JOB. THESE TASKS WOULD INCLUDE THE MOST DIFFICULT TASKS, THE MOST TIME CONSUMING TASKS, AND THE TASKS REQUIRING THE MOST RESPONSIBILITY ON THE PART OF THE WORKER."

	A. Consequences	B. Changing	C. Frequency	D. % Time Spent	E. Rank Tasks
1.					
2.					
3.					
4.					
5.					
6.					

DIRECTIONS:

1. ASK AND WRITE BASIC TASK NO. 1.
2. ASK AND WRITE A FOR BASIC TASK NO. 1.
3. PROCEED TO ASK AND WRITE FOR REMAINING TASKS AS OUTLINED IN 1 AND 2.
4. WHEN ALL TASKS AND A ARE FILLED IN, ASK INTERVIEWEE (REPEATING TASKS) B FOR ALL TASKS (NOTING AT BOTTOM IF "YES"), C FOR ALL TASKS, THEN D FOR ALL TASKS, AND FINALLY E--RANKING TASKS 1-6 BY DIFFICULTY.

INDICATE UNDERLINED CHOICE IN SQUARES:

A. GREAT 1 MODERATE 2 LITTLE 3

B. YES 1 NO 2

C. HIGH 1 MEDIUM 2 LOW 3

D. % FIGURE OF EMPLOYEE'S TOTAL TIME

E. MOST DIFFICULT 1, NEXT MOST DIFFICULT 2, ...

Task No._____ B. How changing?_____

_____Interviewer

"THE NEXT FOUR QUESTIONS ASK FOR SPECIFIC INCIDENTS IN WHICH THIS EMPLOYEE HAS TAKEN PART ON HIS JOB. BY GETTING EACH OF THE PROSPECTIVE 1000 SUPERVISORS TO CITE SPECIFIC INCIDENTS FOR EACH OF THE FOUR QUESTIONS, WE WILL HAVE A LIST OF ACTUAL JOB HAPPENINGS TO USE AS CRITERIA IN EVALUATING PERFORMANCE."

"THE FIRST TWO QUESTIONS RELATE TO JOB PERFORMANCE OF A SPECIFIC BASIC TASK, AND THE NEXT TWO RELATE TO THE CONTACT HE HAS WITH OTHER PEOPLE IN HIS JOB."

8. "REGARDING JOB PERFORMANCE OF A BASIC TASK, WOULD YOU CITE A SPECIFIC INCIDENT WHEN THIS EMPLOYEE WAS PARTICULARLY EFFECTIVE IN PERFORMING THIS TASK?" (INTERVIEWER: PROBE FOR SPECIFIC INCIDENT. PROBE FOR "WHY" EFFECTIVE.) (RELATES TO TASK NO.____.)

9. "IN THE WORKER'S TASK OF (RECALL FROM TASK LIST) , YOU MENTION THAT AN ERROR COULD CAUSE (CHOOSE ONE WITH GREAT OR MODERATE) CONSEQUENCES. WOULD YOU CITE AN EXAMPLE WHEN THIS EMPLOYEE'S PERFORMANCE WAS A LITTLE LESS THAN PERFECT." (INTERVIEWER: PROBE FOR SPECIFIC INCIDENT. PROBE FOR "WHY" ERROR WAS MADE.) (RELATES TO TASK NO.____.)

10. "SINCE ASSUMING THIS JOB, THERE MUST HAVE BEEN TIMES WHEN THIS EMPLOYEE DID AN OUTSTANDING JOB OF WORKING WITH SOMEONE ELSE OR IN HANDLING A SITUATION WITH A CUSTOMER OR CLIENT EITHER FACE TO FACE OR ON THE PHONE. WOULD YOU CITE AN EXAMPLE AND TELL ME IN WHAT WAY THIS EMPLOYEE HANDLED THE SITUATION EFFECTIVELY?" (INTERVIEWER: PROBE FOR SPECIFIC INCIDENT. PROBE FOR "WHY" SUCCESSFUL.)

11. "NOW WOULD YOU GIVE ME AN INCIDENT WHEN THIS EMPLOYEE WAS A BIT LESS THAN 100 PERCENT EFFECTIVE IN HIS CONTACT WITH OTHER BUSINESS PEOPLE--EITHER IN THE OFFICE OR WITH YOUR BUSINESS CONTACTS?" (INTERVIEWER: PROBE FOR SPECIFIC INCIDENT. PROBE FOR "WHY" LESS THAN EFFECTIVE.)

[ ] [ ] [ ] [ ]

_____ Interviewer

C. INFORMATION FROM EMPLOYEE

"IN NOBELS, NEW OFFICE AND BUSINESS EDUCATION LEARNINGS SYSTEM, WE ARE STUDYING THE TASKS THAT YOU AND ALL OTHER OFFICE WORKERS PERFORM IN YOUR JOBS. TO REVISE SCHOOL CURRICULUMS, WE NEED EXACT AND INFORMATION ABOUT YOUR BASIC DUTIES AND HOW YOU PERFORM THEM."

"THESE FORMS ARE BEING CODED IN SUCH A WAY THAT THE INFORMATION YOU GIVE US CANNOT BE IDENTIFIED BY OTHERS IN YOUR COMPANY AND LATER CANNOT BE IDENTIFIED BY SPECIFIC COMPANY OR WORKERS."

12. NAME OF EMPLOYEE _____
(Last) (First) (Middle Initial)

13. EMPLOYEE TELEPHONE - AREA CODE _____ NO. _____ EXT. _____

14. HOW LONG HAVE YOU BEEN EMPLOYED BY THIS COMPANY? _____

15. WHAT IS YOUR PRESENT JOB TITLE? _____

16. HOW LONG HAVE YOU BEEN IN YOUR PRESENT JOB? _____

17. WHAT WAS THE TITLE OF YOUR PREVIOUS JOB (if any)? _____

18. HOW LONG WERE YOU IN YOUR PREVIOUS JOB? _____

19. WHAT WOULD YOUR NEXT JOB BE IN LINE OF A PROMOTION? _____

20. WHEN MIGHT THIS PROMOTION OCCUR? _____

(Circle appropriate answers in 21, 22, 23, and 24.)

21. SEX OF EMPLOYEE: M F

22. AGE: 16 17 18 19 20 21 22 23 24

23. HIGHEST SCHOOL GRADE COMPLETED: K-8 9 10 11 12 13 14 15 16+

24. BACHELOR'S DEGREE: YES NO

Interviewer

25. "IN THIS PROJECT WE ARE CONCERNED WITH THE BASIC TASKS WHICH CONSTITUTE THE CENTRAL PURPOSE OF YOUR JOB. THESE BASIC TASKS WOULD INCLUDE THE MOST DIFFICULT TASKS, THE MOST TIME CONSUMING TASKS, AND THE TASKS REQUIRING THE MOST RESPONSIBILITY ON YOUR PART."

	A. Consequences	B. Changing	C. Frequency	D. % Time Spent	E. Rank Tasks
1.					
2.					
3.					
4.					
5.					
6.					

DIRECTIONS:

1. ASK AND WRITE BASIC TASK NO.1.
2. ASK AND WRITE A FOR BASIC TASK NO. 1.
3. PROCEED TO ASK AND WRITE FOR REMAINING TASKS AS OUTLINED IN 1 AND 2.
4. WHEN ALL TASKS AND A ARE FILLED IN, ASK INTERVIEWEE (REPEATING TASKS) B FOR ALL TASKS (NOTING AT BOTTOM IF "YES"), C FOR ALL TASKS, THEN D FOR ALL TASKS, AND FINALLY E--RANKING TASKS 1-6 BY DIFFICULTY.

INDICATE UNDERLINED CHOICE IN SQUARES:

A. GREAT 1 MODERATE 2 LITTLE 3

B. YES 1 NO 2

C. HIGH 1 MEDIUM 2 LOW 3

D. % FIGURE OF EMPLOYEE'S TOTAL TIME

E. MOST DIFFICULT 1, NEXT MOST DIFFICULT 2, ETC.

Task No.____ B. How Changing?_____

Basic Task No. (as indicated by employee and/or supervisor)

E_____ S_____

_____ Interviewer

TASK DATA FOR PERFORMANCE GOAL WRITING

SUMMARY--TASK BACKGROUND:

TASK:

(STEPS):

CONTINGENCIES OR ALTERNATIVES:

CRITERIA:

INTERVIEWER: TO WRITE FINAL DATA SHEET FOR PERFORMANCE GOAL, YOU WILL NEED ANSWERS TO THE FOLLOWING QUESTIONS: (RESTATE TASKS FROM PAGE 4--IF NECESSARY FROM PAGE 2--TO WRITE UP THE SIX--MAXIMUM-- PERFORMANCE STATEMENTS.)

1. (LISTED AS YOUR FIRST STEP) HOW DO YOU KNOW WHEN THIS TASK IS TO BE PERFORMED? (CUES AND SOURCE)
2. WHAT DOES THE EMPLOYEE DO IN PERFORMING THIS TASK?
3. WHAT TOOLS (EQUIPMENT), SPECIAL SUPPLIES, OR REFERENCE MATERIALS ARE NECESSARY FOR PERFORMING THIS TASK?
4. (LISTED AS YOUR FINAL STEP) HOW DO YOU KNOW WHEN YOU HAVE COMPLETED THE TASK?
5. WHAT KINDS AND LEVELS OF SPECIAL SKILLS ARE REQUIRED FOR THIS TASK?
6. WHAT ARE THE STANDARDS (OR CRITERIA) NECESSARY FOR SUCCESSFUL COMPLETION?
7. SPECIAL REQUIREMENTS FOR PERFORMANCE: DECISION MAKING? TECHNICAL VOCABULARY? PRESSURES (COPING)? CONSEQUENCES OF NOT PERFORMING SATISFACTORILY?

TO: Frank W. Lanham, Principal Investigator

FROM: Calfrey C. Calhoun, Project Director

SUBJECT: The University of Georgia NOBELS Progress Report

1. Major Activities and Accomplishments During the Period, June 1 - September 1:

a. Persons actively engaged in the project:

Dr. Calfrey C. Calhoun, Project Director---------University of Georgia
Dr. Alton V. Finch, Ass't Project Director-------University of Georgia
Dr. Bobbye J. Wilson, Report Reader--------------University of Georgia
Mrs. Norma W. Reames, Graduate Assistant---------University of Georgia
Mrs. Janet Farnsworth, Clerk-Typist--------------University of Georgia
Mrs. Lynda Wilms, Data Collector-----------------University of Georgia
Miss Edna Cole, Data Collector-------------------University of Georgia
Miss Betty Brown, Data Collector-----------------University of Tennessee
Miss Pat Campbell, Data Collector----------------University of Tennessee
Miss Helen Petree, Data Collector----------------University of Tennessee
Mr. George Wagoner, UT Coordinator---------------University of Tennessee

b. A data collectors' training session was held on Monday, May 12, 2:00 - 5:30, and Tuesday, May 13, 9:00 - 4:00, at The University of Georgia for the NOBELS participants in Georgia and Tennessee (Form A). A progress report was given by Dr. Calhoun. Additional problems encountered by data collectors were discussed.

Mrs. Kathleen Herschelmann, Wayne State University, Detroit, Michigan, participated in the training sessions. Revised interview forms for the major data collection as well as interview techniques were discussed thoroughly. Lists of responsibilities for project directors, data collection supervisor, and data collectors were prepared and handed out (Forms B, C, and D).

The culminating activity of the training session was an interview of an office worker by Mrs. Herschelmann while the Georgia and Tennessee data collectors and participants also completed interview forms and performance goals.

Dr. Bobbye J. Wilson visited The University of Tennessee on June 26-28 to further aid the data collectors in the writing of their initial reports.

c. Names, addresses, and standard industrial classification of firms were obtained from The Million Dollar Directory by Dun & Bradstreet, 1968, and The Middle Market Directory by Dun & Bradstreet, 1968; and 3 x 5 cards were prepared for each firm. A more revised SIC was obtained from the duplicated sheets provided by the principle investigator's office. Initially, the first contact made with firms was by telephone, because of the urgency in getting interviews started in early June.

The enclosed copies of letters have been useful in maintaining communications with firms participating in the project. Letter E with the attached card has been the first letter contact with most companies. Telephone calls were made to those firms that returned a card agreeing to participate in order to arrange interviews according to the criteria for selection of office workers. To get enough interviews, it was necessary to make telephone calls to many firms who had not returned the card. Following the telephone conversation setting up the interviews, a confirmation letter (Letter F) was mailed with an enclosure (Form G) setting forth the criteria for worker selection as given over the telephone.

Letter H is an example of the kind of letter sent to firms thanking them for their corporation. So that the project director and the data collectors could be in touch during the week, an itinerary (FormI) was prepared for each week of data collecting giving the address and telephone number of each firm. A master list of interviews has been kept.

d. Data collection was started June 2, and the final interviews were completed during the week ending August 29. Completed interview forms have been edited and needed changes have been reviewed with the data collectors. After revisions have been made, completed interview forms have been forwarded to Project Headquarters, Wayne State University.

Major data reports forwarded to Project Headquarters, Wayne State University:

The University of Georgia

One full-time data collector----------80

One full-time data collector 80
(less 4 returned because of -4
age and education criteria)--------76

Total----------156

The University of Tennessee

One data collector----------42

One data collector----------40

One data collector----------14

Total---------- 96

Total Major Data Collection----------252
(Georgia and Tennessee)

Our percentages are as follows:

	UGA (156 cases)	UT (96 cases)	Total (252 cases)
Size - under 100	17%	8%	14%
over 100	83%	92%	86%
SIC - 1-4	69%	68%	68%
5-13	31%	32%	32%
SEX - Male	20%	14%	18%
Female	80%	86%	82%
SMSA - Over 100,000	80%	88%	83%
Under 100,000	20%	12%	17%

2. Problems Encountered

a. Problems encountered by data collectors:

1. Contact person in the company failed to pass down criteria to immediate supervisor and employee, which resulted in confusion as to age and education limitations.

2. Lack of private office or space to conduct interview--resulted in telephone and other interruptions which disrupted the employee's and interviewer's train of thought.

3. Men workers often held jobs that were so important that they could not be spared for interviews.

4. Since the supervisor's office was often located so far from the employee's work site, it was felt the supervisor really did not know what the worker did on his job. This was particularly true when the supervisor tried to estimate the percentage of time the employee spent on each task.

5. In certain types of jobs (very routine such as keypunch operator), it was difficult to collect critical incidents. The quality of the critical incidents depended upon the personality of the worker, particularly very quiet workers.

6. Supervisors often did not know the ages of the employees. This resulted in the data collector's not being able to use or write the interview.

7. Occasionally, the supervisor limited the data collector's time to interview the worker (30 minutes or less) because of deadlines that the worker had to meet.

8. Many companies indicating a desire to participate in the study had not prepared for the interviews at the time the data collectors arrived. This resulted in data collectors having to wait for the interviews to be set up.

9. Those workers who had been told the purpose of the study before the data collectors arrived gave better interviews than those who were suddenly pulled off their jobs.

b. The response from businesses has not been as favorable as expected. A total of 299 firms were contacted during the major data collection in Georgia. Seventy-four responded positively of which 48 were used. Eighty-six gave verbal or written negative responses, and 139 gave no response after contact letters were mailed. This resulted in a total of 225 firms contacted that did not participate.

The reasons given for not participating by the 86 who responded negatively are:

No office worker in 16-24 years of age group	23
Business too small	15
Vacation schedule overlooked workers	10
No reason	10
Company changing policies	7
Not interested	6
Heavy schedule of workers	4
Could not arrange time	4
Going out of business	3
Company moving	2
Taking inventory	2

c. Problems that have occurred in setting up interviews:

1. The major problem has occurred with respect to the criteria for sample selection. It has been difficult to follow the percentages established in the criteria so that proper proportions were established. Since interviews were scheduled ahead, the percentages could not be followed until the data-in-process were completed. It would have been better to set up "time periods" of several days at intervals during the collection period for all data-in-process to be completed.

2. It has been difficult to arrange interviews to follow the criteria for selection of men office workers between the ages of 16 and 24.

d. The data collectors and report readers found that the editing of the reports was much more involved and required considerably more time than was originally thought necessary. This was particularly so when it became necessary to limit the steps to 12, as so many interviews already conducted were in the process of being edited.

3. Findings

a. Most employers and employees have been cooperative in supplying information and are interested in helping educators to improve business education programs.

b. Data appears adequate to the preparation of performance statements.

c. In spite of the problems that occurred during the collection period, it is felt that the total process has been operated smoothly and that the problems, though sometimes trying, were kept to a minimum for the size and complexity of the operation. The cooperation of many people has been required, and the project director has been pleased with the cooperation. The continuous

help from the office of the principal investigator was always cheerfully given and provided valuable aid, in spite of the time lag. Although the coordination and relaying of information to the satellite collection center at The University of Tennessee was sometimes difficult, the excellent cooperation and willingness to accept suggestions and necessary changes of the staff at The University of Tennessee made the work with them enjoyable and rewarding.

Appendix B

Data Control Forms

NOTES ON NOBELS INTERVIEWS

Two separate interviews are required for each report used in the study.

(1) The first interview is with the immediate supervisor of the office worker to be interviewed. Time required for the interview: 15 - 30 minutes.

(2) The second interview is with the office worker. Time required for the interview: 45 - 60 minutes.

Purpose: To determine basic tasks of the office worker and the steps he follows to do the tasks. The information will be used to re-study the high school business education curriculum so that it can be brought up-to-date.

No company or person will be identifiable in the study. Companies will receive a summary of findings if they desire it.

From one to seven workers plus their supervisors can be interviewed in a company. They must be selected using the following criteria.

(1) Workers to be interviewed must have been on the job long enough to be knowledgeable about the basic tasks.

(2) Workers must be between 16 - 24 years of age.

(3) Workers must not be college graduates, although they might have attended college.

(4) Only two office workers with the same job description can be interviewed in a company and any two such workers interviewed must be in different departments of the company.

Data Collectors

Time	Quota	
Full time (2)	80	160
Two-thirds	50	50
Half-time	40	40
		250

Data shall be collected between June 2 and August 31.

Data collectors will be paid $25 for each acceptable interview write-up.

Turn in the following information to Dr. Finch or Mr. Wagoner each Monday:

1. Itinerary for the week.
2. Interview write-ups from the preceding week. (These should average 8 per week for full-time persons, 5 per week for 2/3-time person and 4 per week for half-time person).
3. Interview writeup summary slip.
4. Expense statement for preceding week. (3 copies - send in 2, keep 1 -- travel budget has been set up on the basis of two interviews per day at an average cost of $25 per day. Reimbursement will be made on <u>actual</u> travel expenditures.)
5. Expense statements for a given week are to be accompanied by write-ups for preceding week.

Project Responsibilities -- Project Director and Assistant Director

Completion Date		
Before May 9	1.	Ten copies of write-up for training session.
Before June 1	2.	Prepare master chart for major data collection: Kinds and number of businesses; number of interviews in each kind of business; number of interviews by cities.
Before June 1	3.	Prepare 3 x 5 cards on 250 jobs: Name of company; contact in each company; classification of company.
May 9	4.	Forms to be used in data collection (prepare or have ready):

Number Data Collector	full-time	2/3-time	1/2 time
Itinerary	12 each		
Interview forms	200 sets	110 sets	100 sets
Write-up slip	12 each		
Expense forms	75 each (send in 2 copies, retain one)		

May 9	5.	Distribute forms (prepare package for each collector)
June-August	6.	Send company contact letter and card
June-August	7.	Code incoming write-ups
June-August	8.	Forward to Wilson for reading
June-August	9.	Refile 3x5 card when write-up is approved
June-August	10.	Prepare and keep cumulative total on each data collector

3x5 card on each:

Name	Quota
Date	No. Acceptable Write-ups
Cumulative Write-ups	

June-August	11.	Store write-ups
	12.	Data Collection

Data Collection Supervisor

Completion Date	Task
As soon as possible	1. Tape interview for training session
May 9	2. Ten copies of write-up for training session
May 10	3. Locate 3 or 4 persons for interview practice
June 1	4. Work with Dr. Finch in preparing master list
June-August	5. Set up interviews for Georgia collectors
June-August	6. Approve or disapprove write-ups (weekly)
	7. Data Collection

FORM I

DATE _____

WEEKLY ITINERARY FOR _____

MONDAY

A. M.	P. M.

TUESDAY

A. M.	P. M.

WEDNESDAY

A. M.	P. M.

THURSDAY

A. M.	P. M.

FRIDAY

A. M.	P. M.

NOTE: Please give Company Name, Address, and Telephone Number.

WEEKLY PROGRESS REPORT OF NOBELS DATA COLLECTORS

(Hand in by 9:00 a.m. every Monday morning)

1. Number of NEW contacts made last week _____. (List company names and addresses)

2. Number of first interviews made last week_____. (List company names and city.

3. Number of second interviews made last week_____. (List company names and city.

4. Number of reports completed last week and turned in_____.

SCHEDULE OF MODEL REPORTING BY DATA COLLECTORS

(for your record)

Company Name	Company Address	Contact Person (give title)	Date of Contact	Date of 1st Int.	Date of 2nd Int.	Date to Hand in Report

Appendix C

University - Company Communications

THE UNIVERSITY OF GEORGIA
COLLEGE OF EDUCATION
DIVISION OF VOCATIONAL EDUCATION
ATHENS, GEORGIA 30601

DISTRIBUTIVE EDUCATION
AGRICULTURAL EDUCATION
HOME ECONOMICS EDUCATION
INDUSTRIAL ARTS EDUCATION
BUSINESS AND OFFICE EDUCATION
TRADE AND INDUSTRIAL EDUCATION

Gentlemen:

The Business Education Department of The University of Georgia is participating in a national research project called NOBELS, New Office and Business Education Learnings System. The project is designed to determine what workers do in the business office. Once we determine what tasks the office worker actually performs, we hope to develop a curriculum which will teach what the potential office worker needs to know.

Your company has been selected as an excellent source for data. May we have your permission to interview some of your office workers and their immediate supervisors? The supervisor interview requires approximately 15 - 30 minutes. The employee interview requires approximately 45 - 60 minutes. All information is treated confidentially, and company names are coded for complete anonymity.

We would be most grateful for your participation in this project that will not only help us teach the prospective worker what he needs to know, but will also make him more valuable to you as a prospective employee.

Please return the enclosed card giving us the name of the person whom we should call to make arrangements for the interviews. If you have any questions, you may call me, Dr. Alton Finch, or Dr. Jo Wilson at Area Code 404, Telephone Number 542-3132.

Sincerely,

Calfrey C. Calhoun

Calfrey C. Calhoun, Chairman
Business Education Department

CCC:nwr

Enclosure

THE UNIVERSITY OF GEORGIA
COLLEGE OF EDUCATION
DIVISION OF VOCATIONAL EDUCATION
ATHENS, GEORGIA 30601

DISTRIBUTIVE EDUCATION
AGRICULTURAL EDUCATION
HOME ECONOMICS EDUCATION
INDUSTRIAL ARTS EDUCATION
BUSINESS AND OFFICE EDUCATION
TRADE AND INDUSTRIAL EDUCATION

Dear Mr.

Thank you very much for giving us permission to interview (no. of workers) of your office workers and their immediate supervisors on (date of interview).

The enclosed sheet lists the criteria which were given to you on the telephone to use in selecting the workers to be interviewed.

Mrs. Linda Wilms and/or Miss Edna Cole will be in your office at (hour of interview) to begin.

Sincerely

Mrs. Norma Reames
Research Assistant
Business Education Department

NR:jf

Enclosure

THE UNIVERSITY OF GEORGIA
COLLEGE OF EDUCATION
DIVISION OF VOCATIONAL EDUCATION
ATHENS, GEORGIA 30601

DISTRIBUTIVE EDUCATION
AGRICULTURAL EDUCATION
HOME ECONOMICS EDUCATION
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BUSINESS AND OFFICE EDUCATION
TRADE AND INDUSTRIAL EDUCATION

Thank you, (contact person),

. . . . for your cooperation in arranging the interviews for the NOBELS data collection in the _____ (company) _____.

We certainly appreciate your helpfulness and participation in NOBELS. Please express our appreciation to the persons in your company who permitted us to interview them.

When the project is completed, we will mail you a copy of the report.

Sincerely,

Calfrey C. Calhoun, Chairman
Business Education Department

CCC:jf

cc: (names of all supervisors and office workers)

Dr. Calfrey C. Calhoun, Chairman
Business Education Department
College of Education
The University of Georgia
Athens, Georgia 30601

Dear Dr. Calhoun:

_____Company is happy to participate in NOBELS. Please call _____ (Name) _____ at Area Code _____ Telephone _____ to arrange the interviews.

Sincerely,

Appendix D

Progress Reports

PROGRESS REPORT

OE BR NO.: 8-0414 Grant No.: OEG-0-8-080414-3733(085)
University of Ga. Pilot Study (91-E)

Period: 12-01-68/03-10-69

Date of Submission: 3-10-69

Institution: University of Georgia (through contract with Center for Vocational and Technical Education)

Title of Project: Development of Performance Goals for a New Office and Business Education Learnings System (U. Ga. Pilot Study 91-E)

Project Director: Calfrey C. Calhoun

1. MAJOR ACTIVITIES AND ACCOMPLISHMENTS DURING PERIOD

Activities during the above period related primarily to the following:

a. A Planning Session at Los Angeles, December 17, 1968, involving Dr. Frank Lanham, principal investigator, Wayne State University; and sub-contractors, Dr. Lawrence Erickson, UCLA, and Dr. Calfrey Calhoun, University of Georgia. Content and format of sub-contracts and delineation of pilot data collection procedures and schedule were formulated. Following this meeting and subsequent discussions with Dr. Lanham and Dr. Edward Morrison of the Center for Vocational and Technical Education, an initial sub-contract including statement of work, schedule, and budget was forwarded from the University on January 12. A revised and more detailed sub-contract was subsequently required; it was approved by the University and forwarded to Dr. Lanham on February 10, 1969. The U. S. Office of Education approved the sub-contract effective Feb February 1; it was received and endorsed by the University of Georgia on March 7, 1969.

b. Selection and Pre-Training of Data Collectors. In December, 1968, pilot data collection team members were recruited from departmental staff and doctoral students at the University of Georgia and and the University of Tennessee. The following personnel, in a addition to the sub-contract director, are now active in the project:

Dr. Alton V. Finch, Asst. Project Director and Data Collector---------- University of Ga.
Dr. Bobbye J. Wilson, Data Collector------ University of Ga.
Mr. John M. Sheppard, Data Collector------ University of Ga.

Mrs. Margrett Adams, Data Collector-------University of Ga.
Mrs. Norma Reames, Graduate Assistant-----University of Ga.
Miss Betty Brown, Data Collector----------University of Ten
(Under supervision of Prof. George Wagoner,
Board of Governors for R & D in Bus. Educ.)

Pre-planning and training sessions for data collectors were held in January and February. Team members were familiarized with details of the project including (1) Mager's Preparing Instructional Objectives; (2) Huffman, et al, Taxonomy of Office Activities; and the (3) Revised copy of the NOBELS proposal.

c. Training Session for Data Collectors. The pilot data collection team joined project personnel from Wayne State, UCLA, Minnesota, and State University of New York at ALbany for the NOBELS Training Session February 14-17 in Detroit where operational details of data collection were explained. Interviews with supervisors and employees were rehearsed as a basis for the preparation of generalized performance statements.

d. Preparation for Pilot Data Collection. Revised procedures involved in pilot data collection were reviewed with the team following the Detroit meeting. Plans for selecting and contacting individual businesses were reviewed and set in motion. A master list of interviews is being kept.

e. Initial Collection of Pilot Data. Data from approximately fifteen work stations have been written up with approximately twenty more in process. Data are being collected from the Atlanta, Macon, Athens, and Knoxville metropolitan areas.

2. PROBLEMS

Major problems to data have involved

a. Difficulties related to getting sub-contract approval. These delays have caused some inconvenience in making personnel arrangements.

b. The fact that the contract dates overlap the regular University quarter necessitates some budgeting problems which are being resolved.

c. Becoming familiar with instruments and well-versed in interview techniques is a natural part of the initial stages of such a study. This is correcting itself as interviews progress and as we discuss and review them.

d. The Instruments: NOBELS Form 1, Item 2: To avoid confusion about employing unit and number of company employees, we are showing total plant employees and total in individual unit. (Definition of plant, division, dept. is needed.) Also, reported incidents related to job performance and contacts are improving although there is some hesitancy on the part of supervisors to supply these.

3. FINDINGS AND FUTURE EVENTS

a. Employers and employees are proving to be most cooperative in supplying information. The data at this point appear to be adequate to the preparation of general performance statements. Improvement of performance of interviewers has been steady.

b. Reservations have been made for a meeting of principals on March 23-25 at the Regency-Hyatt House, Atlanta, Georgia.

TECHNICAL PROGRESS REPORT

OE Bureau of Research Number: 8-0414

Contract or Grant Number: OEG-0-8-080414-3733(085)

Period: 3-10-69/4-15-69
Date of Submission: 4-15-69
Institution: University of Georgia (through contract with Center for Vocational and Technical Education)

Title of Project: Development of Performance Goals for a New Office and Business Education Learning System (University of Georgia Pilot Study 91-E)

Project Director: Calfrey C. Calhoun

1. MAJOR ACTIVITIES AND ACCOMPLISHMENTS DURING THIS PERIOD

A number of improvements were made in the data collection procedures as a result of the following meetings:

A. A meeting of area project directors with the principal investigator was held March 22-23 in Atlanta. Agenda of this meeting related to the following:

(1) Review of progress and problems from the two pilot centers at UCLA and the University of Georgia
(2) Cost effectiveness, alternative procedures, and redundant data.
(3) Review and recommendations on data received.
(4) Review of classification schemes.
(5) Statements of work, schedule, and contracting with the
(6) Center for major data collection period 15 May through 31 December.

B Meeting with consultant from principal investigator's staff, March 28. Emphasis in this meeting, which involved the University of Georgia pilot data collection team and Mrs. Kathleen Herschelmann, was placed on effective use of data collection instruments, interview technique, and preparation of recommended revisions to the data collection instruments.

2. PROBLEMS

Interviewers have found the taxonomy of verbs compiled by Huffman et al to be helpful in systematizing the description of office tasks, but there are many instances where it is necessary to use descriptive verbs not included in the taxonomy.

Some difficulty has been experienced by data collectors in getting critical incidents from supervisors covering each basic task. Allowing collectors to get a "success" or "non-success" item related to a given employee (or comparable employee) is expected to yield improved results.

The time required for data collection, analysis and reporting per job station exceeded our expectations at the outset. Initially our interviewers spent 15-20 hours in initial travel, with supervisors and employees, revisit covering travel and interviews, classification of tasks, and writeup. This time has been considerably reduced in the revised procedure in which all data are collected in one visit. Revised procedures now in use focus on one-day task sheets involving basic tasks. Extended probes are made to determine persons, properties, and tools that identify conditions of basic performance. It is estimated that average amount of time, excluding travel, now spent in interviewing and write-up approximates 10-12 hours per job station.

We have experienced best results in data collection where interviewers possess detailed knowledge of the job under study. Matching interviewers wherever possible to the job being probed according to their experience is recommended.

The problem of the size of the step for task performance (the amount of detail to be included) gives us some concern. However, the application of the following criteria has been of value: (1) the processing of a task (listing by steps) should be clear to a moderately intelligent business teacher; (2) each step should have an educational implication).

There exists a need to develop further training materials for data collectors including model or sample instructional objectives.

The problem of organization for such an effort is considerable. The project director has contributed one-third time to the project; an assistant project director is presently giving 2/3 time to the project, plus a project supervisor who is giving 1/3 time. During the major data collection, it is anticipated that these persons, who have been involved in data collection during the pilot, will be involved in an administrative and supervisory capacity for additional full time data collectors.

A definite problem was faced during the pilot in making commitments in the absence of a contract. Delay in receiving official approval of the contract resulted in heavy pressure on data collectors to fill the quota in a very limited time.

The revised procedure placed in effect following the Atlanta meeting has reduced overall time for data collection. At the same time it has lengthened the time required of the supervisor insofar as critical incidents are concerned. Some supervisors have shown signs of fatigue during the critical incidents questioning.

3. SIGNIFICANT FINDINGS AND EVENTS

We have been generally well pleased with the effectiveness of the interviewers in getting the required information within the time limits specified. Training received in the pilot phase should accrue to the advantage of the University team during the major data collection period. As a means of training new personnel for the upcoming phase, we have identified data collectors and have sent them on prearranged trial interviews and on data collection visits with regular NOBELS collectors. Two of these individuals are already reaching the point of productiveness in conducting interviews. Additional personnel will be employed from the University of Tennessee in a similar capacity.

We have found a potential reservoir of valuable information available in the area of changing tasks available in certain companies if the proper individual is interviewed. For example, the writer recently received the following answers from a supervisor in an insurance company in Macon, Georgia (who happened also to be a vice president in the firm) when asked, "Are there any tasks that you know will be radically changed or eliminated in the foreseeable future?"

> "Presently we type policies in our office, rate them, send out bills, and incur accounts receivable. More and more, companies are going to computer where the machine performs all these functions effectively. In turn, they are cutting our percentage of the policy. At one time, we got 24%; now we get 18%. In the foreseeable future, our typists will be replaced with a key-punch operator. She will ask the computer for an answer which will be forthcoming in a few seconds.
>
> Another change is coming to us shortly involving storage of files. These will soon be replaced by computer tape.
>
> The percentage of our accounts receivable already on computer is 20%. On policies we type, we send out an invoice. Thirty days later we pay it up for that policy whether or not we receive the money. Under the new system we ask the company for a year's premium: it goes in with the application; a policy comes back and the company bills the insured directly at his address. He remits directly to SAFECO or whoever is involved. If he does not pay, he is canceled. We will still have need for the secretary, the girl who can handle files inside the office and supervise its operations. But we can expect to eliminate the routine, repetetive tasks.

4. DISSEMINATION ACTIVITIES

None in this period.

5. CAPITAL EQUIPMENT ACQUISITIONS

None.

6. DATA COLLECTION

See items 1-3. Data collection to this point has yielded output from approximately sixty job stations. The interviewers will experiment with the form revised by Dr. Erickson at UCLA on a limited number of job stations in collections during the immediate future.

7. OTHER ACTIVITIES

8. STAFF UTILIZATION

Schedules, quotas, and obligations of data collectors and others connected with the project are being drawn at the present time. Dr. Alton Finch has been designated assistant director and will continue to work closely with the project director in planning and administering the project. Dr. Jo Wilson will take on new responsibilities in training of interviewers and in analyzing writeup of our own data.

We are planning an additional training conference for Georgia and Tennessee data collectors on May 12-13. This conference will emphasize the writing of the performance statement, will bring team members up to date in new data collection instruments and mechanics of data collection, and will serve to coordinate the efforts of personnel at these two universities.

9. FUTURE ACTIVITIES

It is anticipated that the contract for the period 5-16-69/ 12-31-69 will be revised and in the hands of the principal investigator within a few days. Project personnel are being identified and trained for the major data collection period.

A meeting of project directors and team leaders on or about May 1 is expected to provide policy and procedure necessary to implementation of data collection on a four-region basis.